

QSS-30 Training Materials

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Technical Training Department
Technical Support Group

DRAFT

www.minilablaser.com

QSS-30-1

Chapter 1 Specifications

The point of this chapter

Purpose of study

- Study the specifications of the QSS-30.

Processing capacity

Main options

Spec of PC

How to carry out the training

- Explain, using the Training material.
- Refer to Specification Manual for the details.

Concept

Full digital mini-lab system which outputs from scanning image to the photographic paper by digital signal. This is the first digital mini-lab with the laser engine installed at Noritsu.

The film is scanned by the S-1200 (Single Film Scanner), the image data is transferred to LPP-1200 (Laser Printer Processor) through LVDS cable, and prints are made.

The QSS-30 can process up to 210 mm paper width.

This is the succeeded machine with the QSS-26.

QSS-3001Digital :

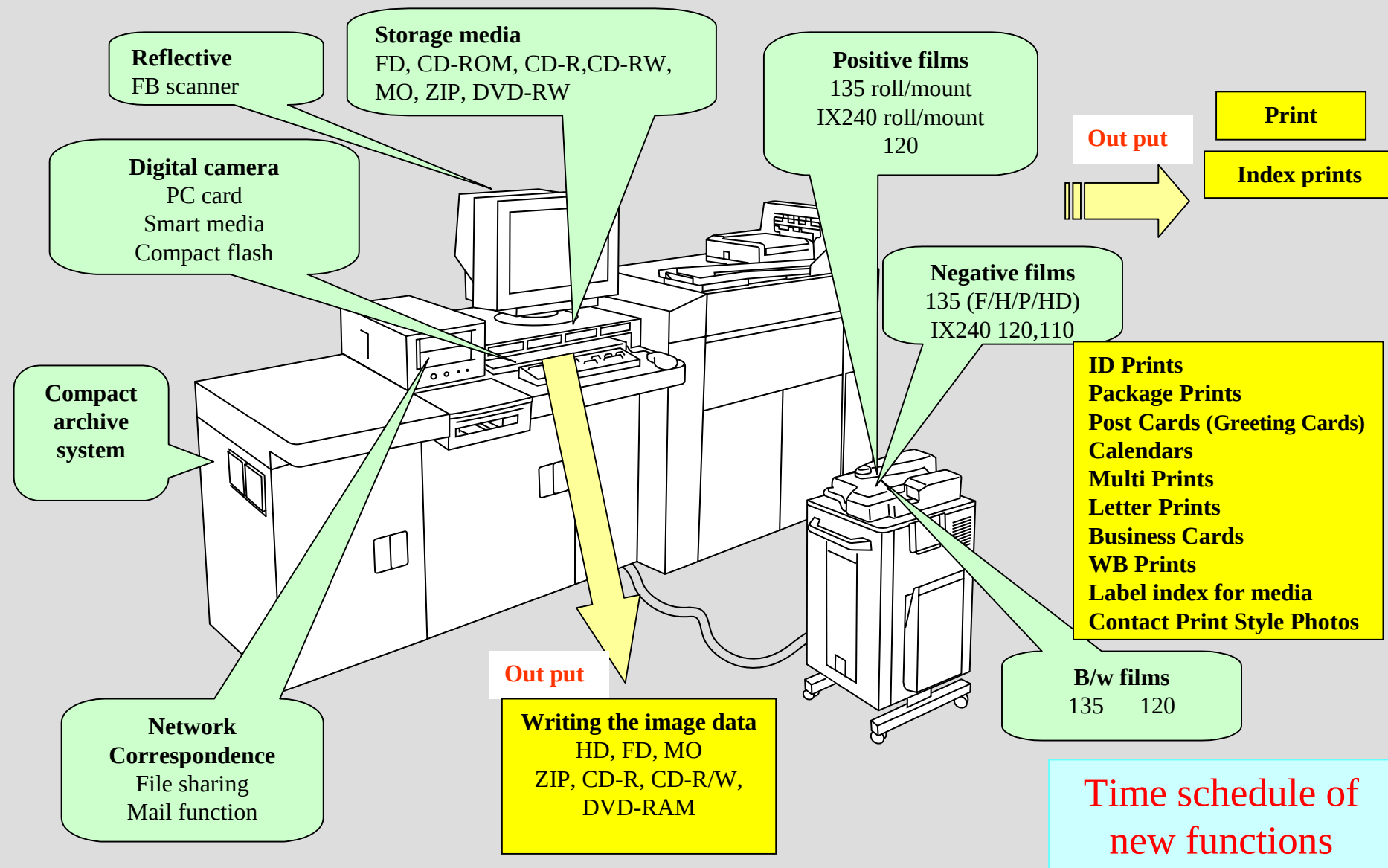
89 x 127 1160 prints / hour

89 x 127 620 prints / hour Digital camera/media

Types of QSS-3001

Name of the machine	Specification
QSS-3001 Digital	Standard type
QSS-3001SM Digital	SM type

What can you do in the QSS-3001?



Usable media

x = available

Types of media	Input	Output	Note
FD	x	x	Standard equipment
CD-ROM	x		CD-ROM (standard) or CD-R/RW (option) is necessary.
CD-R	x	x	The CD-R/RW drive (option) is necessary.
CD-RW	x	x	The CD-R/RW drive (option) is necessary.
MO	x	x	The MO drive (option) is necessary.
ZIP	x	x	The ZIP drive (option) is necessary.
DVD-RAM	x	x	The DVD-RAM drive (option) is necessary.
Compact flash	x	x	The card reader (option) is necessary.
Smart media	x	x	The card reader (option) is necessary.
PC card	x	x	The card reader (option) is necessary.
Reflective	x		The flatbed scanner (option) is necessary.

***Explain the spec of each drive, etc. separately.**

Processable Format

	Image format
Input	Exif 1.0 JPEG FlashPix Bitmap PSD (including Photo Shop Document, CMYK Format) PCD (Photo CD) PCX, DCX (Paint Brush Format) TGA (Targa)
Output	JPEG FlashPix Bitmap

Processable DVD

Processable format	Capacity	Format
DVD-RAM	Single side 2.6G 4.7G Double side 5.2G 9.4G	TYPE1 (Cartridge-type, Impossible to eject the disk)
		TYPE2 (Cartridge-type, Possible to eject the disk)
		Disk-type ("Play" only)

Main options

Types of carriers	Film type	Size	Note
135/240 AFC	Negative/Positive/Black&White/(Roll) Sepia/Black&White (orange base)	135F, H, P, HD IX240	Minimum number of frames:2-frame
120AFC	Negative/Positive/Black&White/ Sepia/Black&White (orange base)	6x4.5, 6x6, 6x7, 6x8, 6x9	Minimum advance length:43 mm (6 x 4.5 1 frame)
110AFC	Negative	110	Minimum number of frames:3-frame
135/240M MC	Positive (mount)	135F, H, IX240	Length of mount 50 mm x 50 mm Thickness: 1.0 mm – 3.2 mm Glass mount is not available.

Show each AFC.

Components of film carriers

AFC (only for S-1200)	Components	Part No.
135/240AFC Z809328-01	S-1200 compatible kit	Z809335-01
	135/240AFC	Z809292-01
120AFC Z809329-01	S-1200 compatible kit	Z809336-01
	120AFC	Z809295-01
110AFC		
135/240MMC		

Options (related to PCs)

Name	Description/Explanation
DIMM	Extended memory unit for 256MB Personal Computer, for the stable use of the Photoshop with processing to input the maximum image data size to 7,400 x 5,000.
ZIP drive unit	Unit to save/read the image data to a ZIP
MO drive unit	Unit to save/read the image data to a MO
DVD-RAM drive unit	Unit to save/read the image data to a DVD-RAM
CD-R/RW drive unit	Used to save/read the image data to the CD-R/W
PC card reader/writer	Unit to save/read the image data of digital camera
Flatbed scanner	Used to read the reflective (e.g. photograph) as image data
SCSI card unit	Unit is necessary to set the option (MO, PC card reader, /raid, DVD-RAM)

***The spec, etc is mentioned separately.**

Package contents of image edition

Name	Description/Explanation
Card/Calendar Creation Software	Calendars
	Post card prints
	Business Cards
	Frame Prints
	Letter printing
	Card Prints
Multi-Frame Print Creation Software	Multi-frame Prints
	Album Prints
	Package Prints
	Contact Print Style Photos
	ID Photos
Red Eye Removal Software	Red eye removal function

Others

Name	Description/Explanation
Digital ICE	Used to remove scratches, etc. from image in negative or positive which is scanned by the built-in scanner. (Software and sticker)
CVP, Ribbon cassette	The ribbon cassette is compatible with the QSS-28, 29.
Monitor hood	This is compatible with the QSS-28, 29.
Pricing unit	Used to calculate prices and issue statements automatically
Film cleaner kit	Used to remove shut after the film scanning by AFC.
Cleaner stand	Used to put cleaner on the stand when processing film of 120, 110.
Flatbed scanner desk	Used to put flatbed scanner on the stand.
Double magazine unit	Used to change from shingle magazine to double magazine.
120AFC usable kit	Used to add DIMM256MB for image processing PCB (total: 2) when processing 120 films.
Scanner communicated kit (8m)	Used to communicate from S-1200 to PP-1200. (factory option)

Magazine

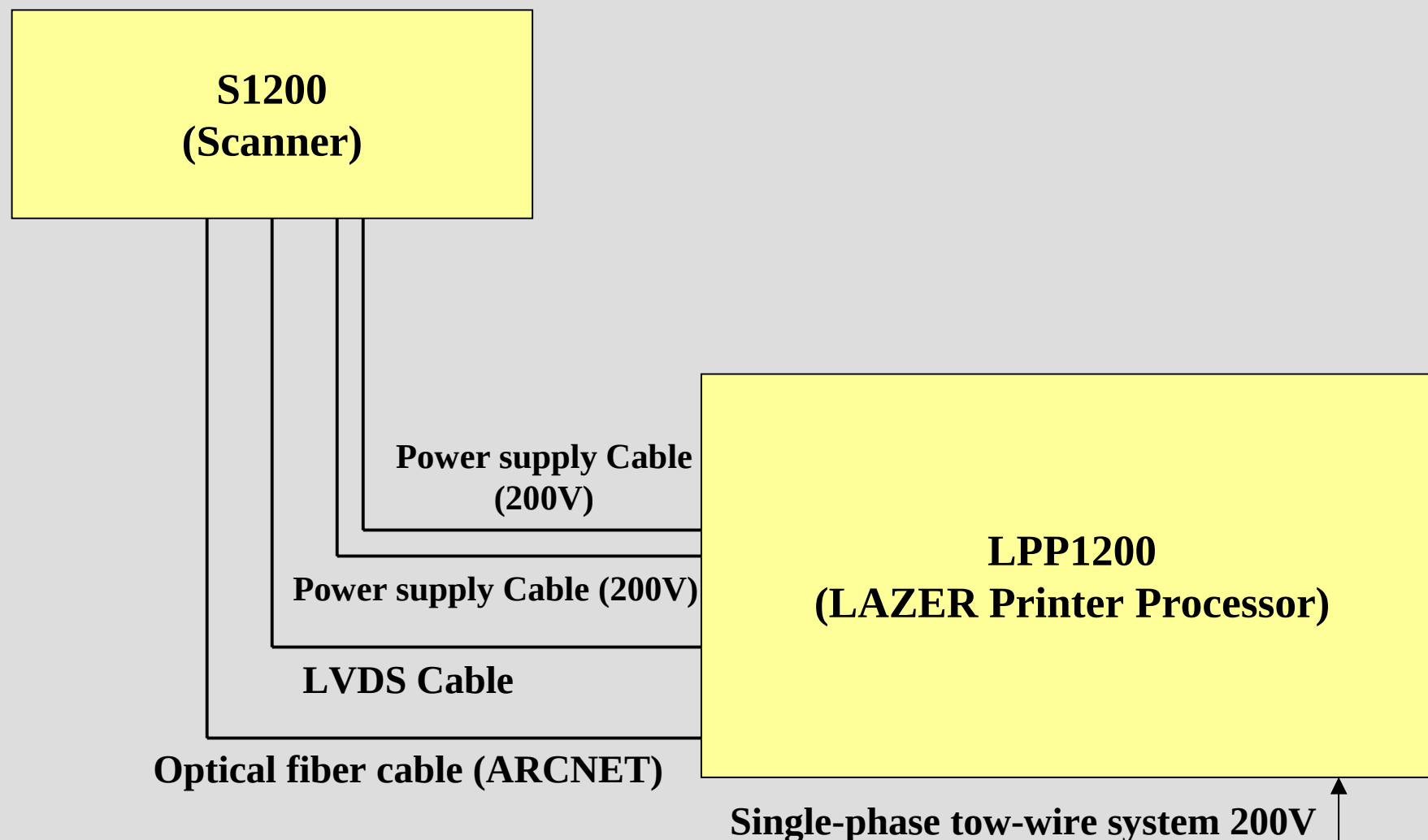
Standard magazine	Compatible between Normal and Kodak specification. (Carry out the unit replacement only as it is already adjusted.)
QL magazine	For QL paper (Carry out the unit replacement only as it is already adjusted.) The core unit is different from the standard magazine.

Point 1: The magazine is only for QSS-30.

Point 2: It is impossible to use the QSS-26 magazine by modifying it.

It is possible to make a print with the QSS-26 magazine, but the zigzagging may occur.

Explanation of the system (Connection)



Print sizes

Usable paper width	82.5 mm to 210.0 mm
Paper advance length	117.0 mm to 356.0 mm
Maximum print sizes	210.0 mm to 356.0 mm

Usable paper

Maximum diameter of paper	250 mm (180 m length)
Usable paper	Digital paper / Analog paper Thin paper (0.2 mm) is not supported.

Specifications of personal computers

PC spec table

	Product name	Specifications
CPU	Pentium III	733MHz
Mother board	FB5-LN-12	
Memory	RIC-S133-256A	256MB PC133
3.5FDD	YD-702D-6238D	2 modes
Hard disk	LCT20 20GB	20GB
CD-ROM drive	CR-594-B	48x
Keyboard (Japanese)	FKB8724-501	
Keyboard (English)	FKB8725-401	
Mouse	Mouse Port Compatible Mouse 2.2A	
OS	Windows 2000 professional SP1.COA	

Spec table of peripherals

	Machine type	Maker	Types of media	Data capacity	Interface
MO	MCE3064SS	FUJITSU		640MB 540MB 230MB 128MB	SCSI-2
Zip	Zip250	Iomega	ZIP	250MB 100MB	IDE (ATAPI)
CD-RW	RW7125A	Ricoh	CD-ROM CD-R CD-RW	650MB	IDE (ATAPI)
PC card reader	PCD-47B	Microtek International	Smart media	2 to 64MB	SCSI-2
			Compact flash	4 to 128MB	
			PCMCIA	10 to 85MB	
DVD	LF-D291NS	Panasonic	DVD-RAM	Single side 4.7, 2.6GB Double side 9.4, 5.2GB	SCSI-2
			DVD-ROM	Single side 4.7GB	

Spec of flatbed scanner (option)

Machine type	Astra3400
Maker	UMAX
Color scanning way	Color CCD (Single Pass)
Maximum area of scanning	216 x 297 mm (8.5 x 11.7-inch)
Optical resolution	600 x 1200 dpi
Maximum resolution	9600 x 9600 dpi
Interface	USB

Chapter 2

Outline of the system

The point of this chapter

Purpose of study

- Explain the outline of the system for the QSS-30.

Scanner, Laser

Processable media, Image size, Paper size

Digital-ICE, Paper advance system

How to carry out the training

- Explain the items referring to the training materials and using the actual machine.

Scanner Light Source

Light source :

The halogen lamp of 15V and 150W is used.

The lamp and reflector are assembled in one.

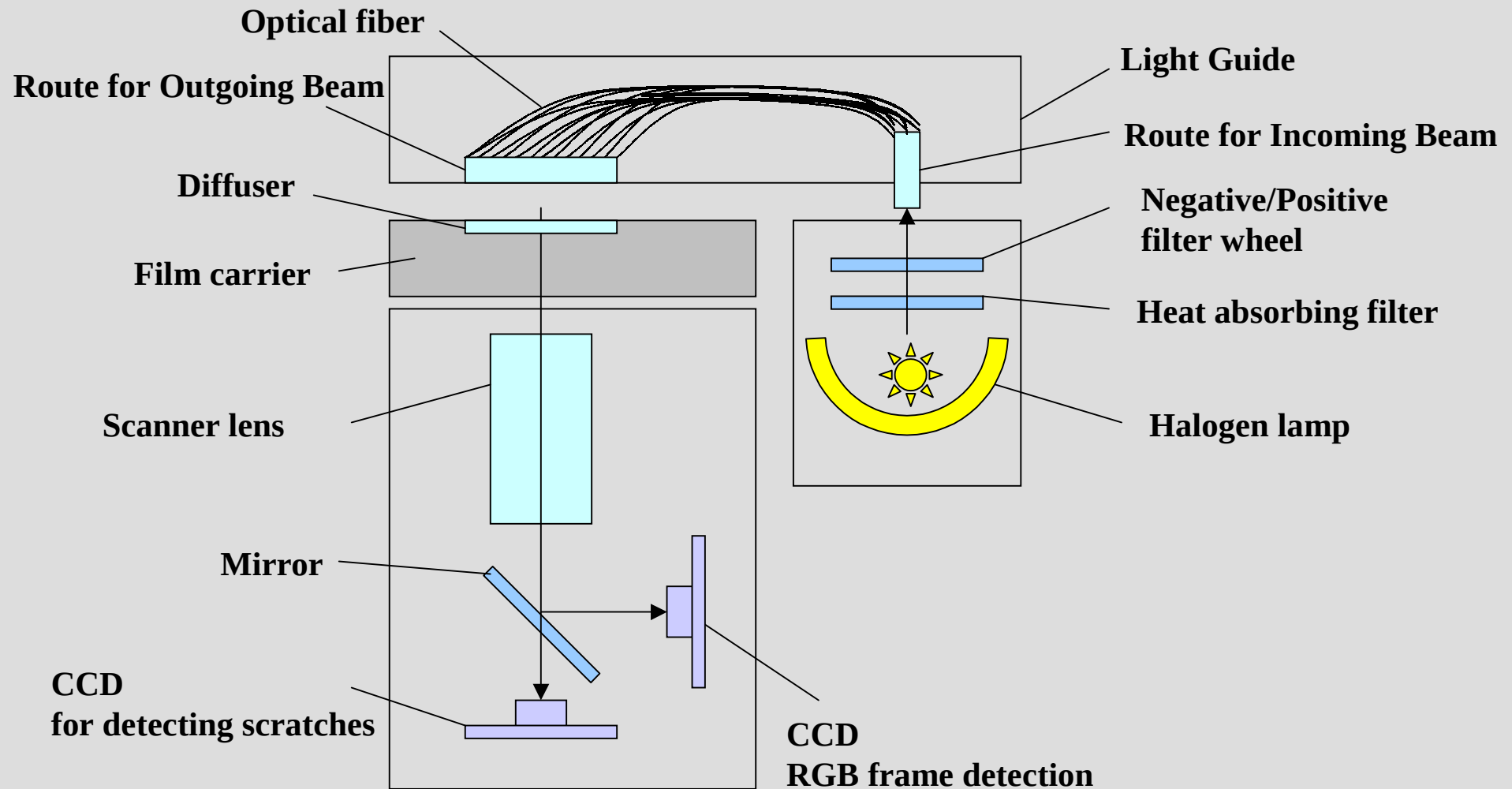
Light source parts :

The light guide is used. The conventional lens box (or mirror tube) is not used. The light guide transmits “the light emitting from the halogen lamp” to the film carrier, using the optical fiber.

The followings are the merits of using the optical fiber, comparing with the conventional QSS machines.

- *The relations between the positions of incoming beam and outgoing beam can be positioned freely, so the appearance dimension can be designed smaller.
- *The transmission rate of light is high, and it is possible to use the lamp that the quantity of electricity is small.
- *The life of lamp becomes longer.
900 hours (QSS-29) → 2,400 hours (QSS-30)

Exposure route of scanner



Scanner

Image capture method

Optical resolution (Main or the CCD line)	Input the one line image with line CCD.
Scan pitch (Sub scanning)	Film is moved.
CCD	Scan RGB each with line CCD (5,000 pixels).
Others	ISL filter*1 is available. Automatic dust and scratch removal for films is available. (Digital ICE) (option)*2

Sticker for permission of use



*2



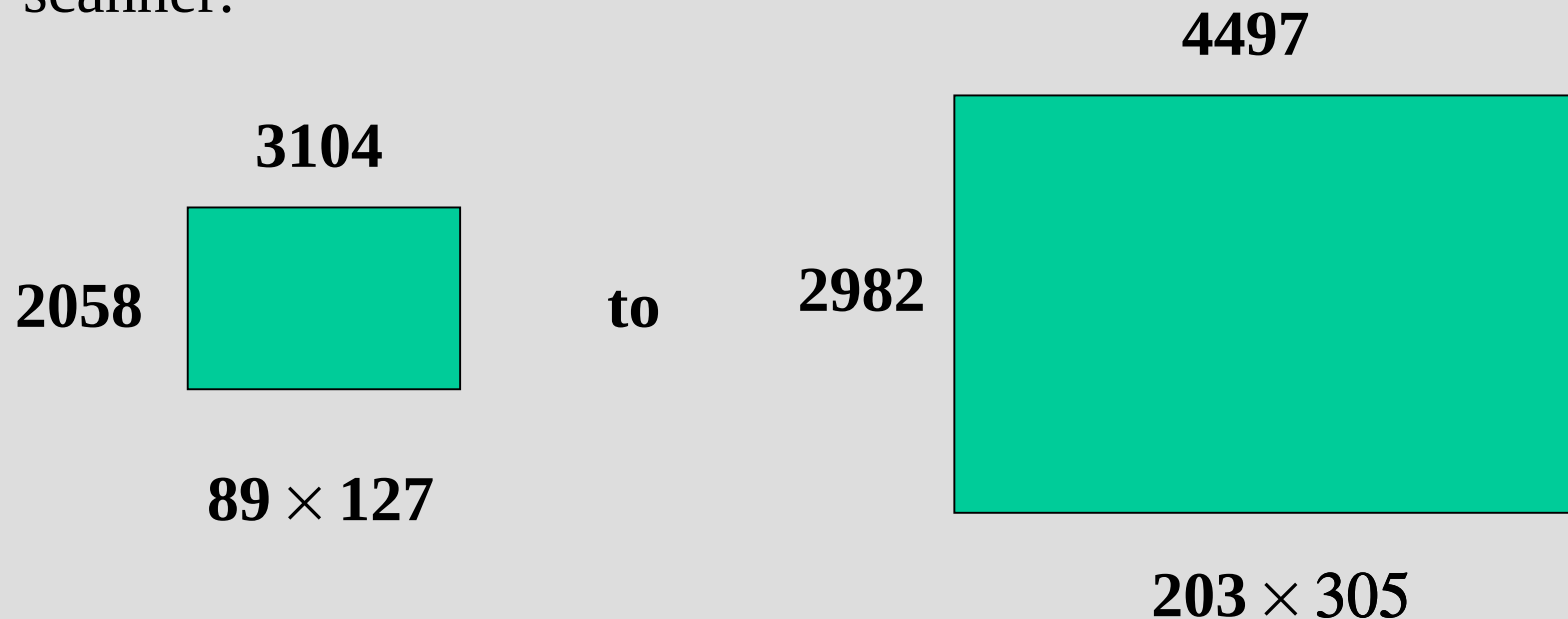
AFC scanning movement

Scanning movement	Pre-scanning + Final Scanning	Same with the QSS-29
Film ejection direction	Return to the film insertion direction side	Same with the QSS-29

Resolution of the image

- Input resolution (resolution of the image) is different depending on the film size and paper size each.

Change the resolution of the image by the zoom lens of scanner.



Resolution of the image when scanning 135 film (Unit: pixel)

Resolution of the image (film size each)

Film size	Minimum	Maximum
135F	2058 x 3104	2982 x 4497
135H	2058 x 1451	2574 x 1834
240	1394 x 2093	2046 x 3596
110	1250 x 1645	1640 x 2145
6 x 4.5	4599 x 3362	The resolution of the image is fixed.
6 x 6	4599 x 4530	
6 x 7	4666 x 5617	
6 x 8	4666 x 6290	
6 x 9	4620 x 6727	
135 mount	1397 x 2939	
240 mount	1260 x 2215	

Minimum necessary pixels for paper size each

Size (mm)	Pixel
82.5	1040
89	1122
102	1286
127	1600
152	1915
178	2243
203	2558
254	3200
305	3840

Calculating formula

$\text{Size (mm)} / 25.4 \times 320 \text{ (dpi (resolution of printer))} = \text{Resolution of the image for one side}$

Scanning

- * The zoom value of scanner is decided on the basis of the smallest among the paper sizes, which are registered in the print channel (C/P/H).

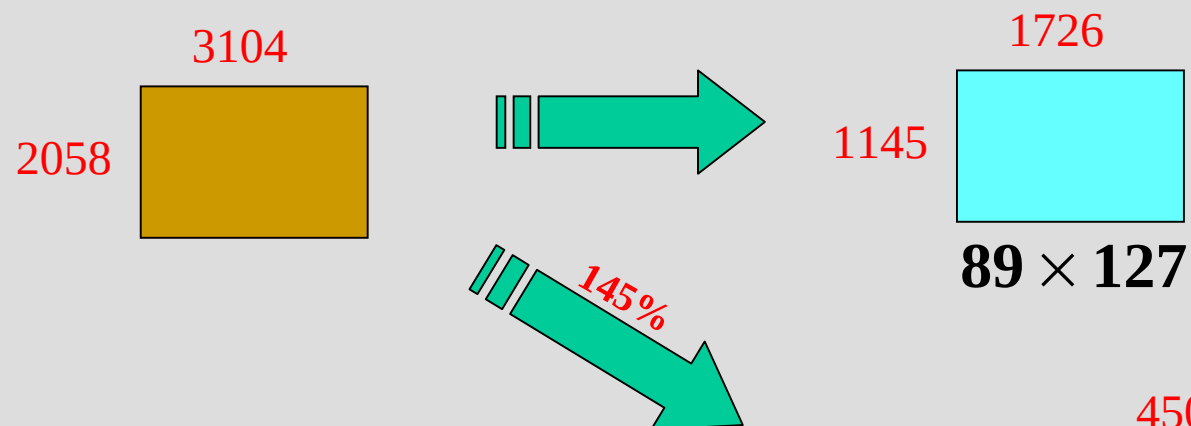
Example)

In the 135F, when setting “C: 89 x 127” and “P: 210 x 356”, the resolution of image is 2058 x 3104.

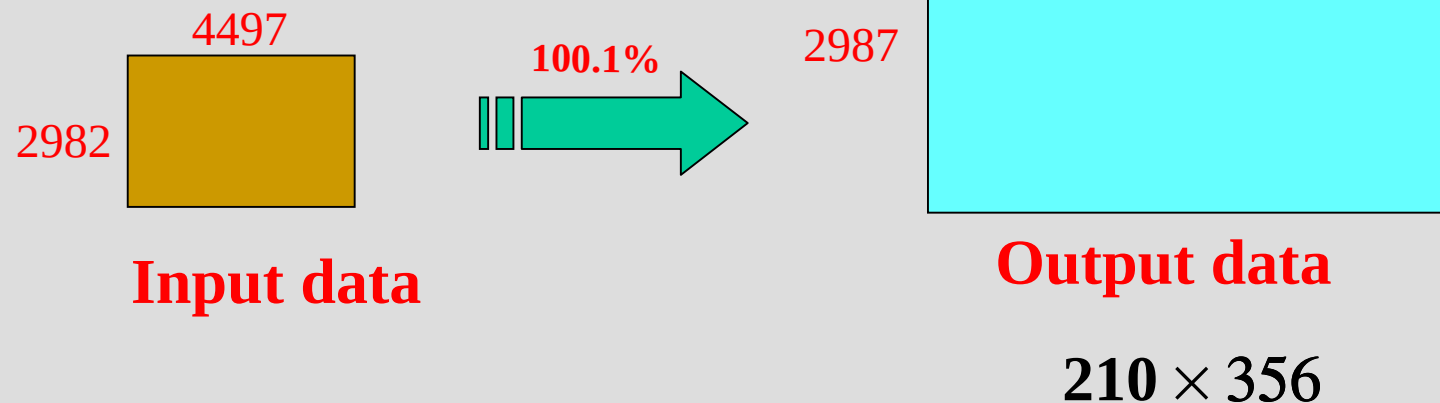
The resolution of image for 210 x 356 channel only is 2982 x 4497.

Print channel and scanning

In the case of interspersed channel (3R and maximum paper size)



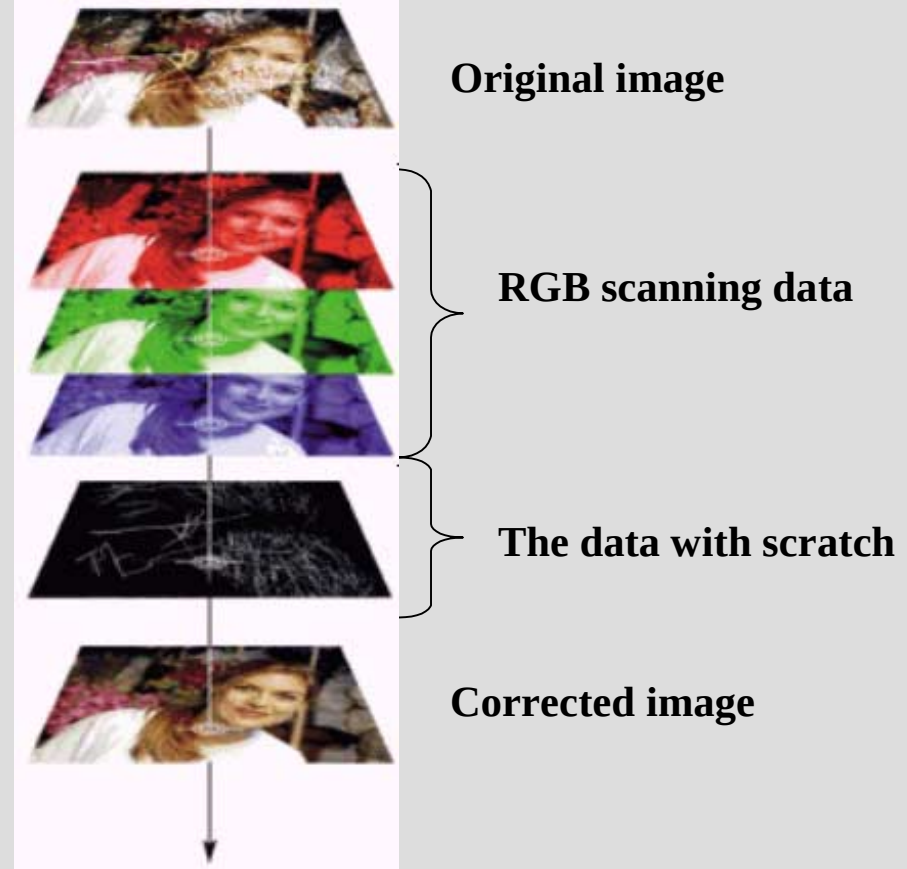
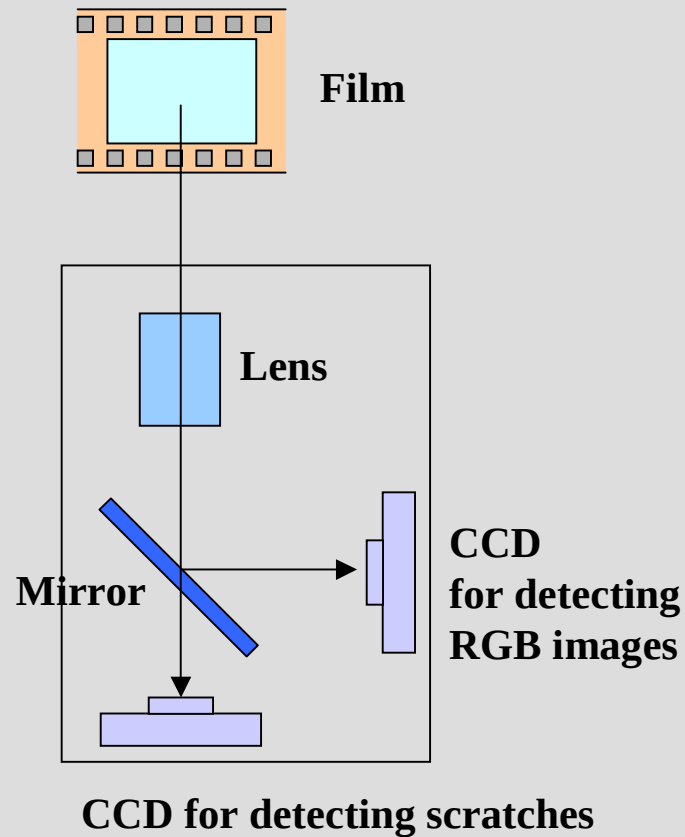
In the case of CH for maximum paper only



Pre-scanning

Film sizes	Resolution
135F C/HD/P	257 x 388
135H	257 x 181
240C/HD/P	252 x 442
110	312 x 411
6 x 4.5	286 x 210
6 x 6	286 x 283
6 x 7	291 x 351
6 x 8	291 x 393
6 x 9	291 x 424
135 mount (F/HD/P)	239 x 367
135 mount (H)	239 x 156
240 mount	157 x 276

Digital ICE



The technology to make the images without scratch, dust, etc. In addition to the CCD which takes the color information of RGB, the another CCD is added. It detects the dust, scratch, etc. on the film. This corrects the scanned image information.

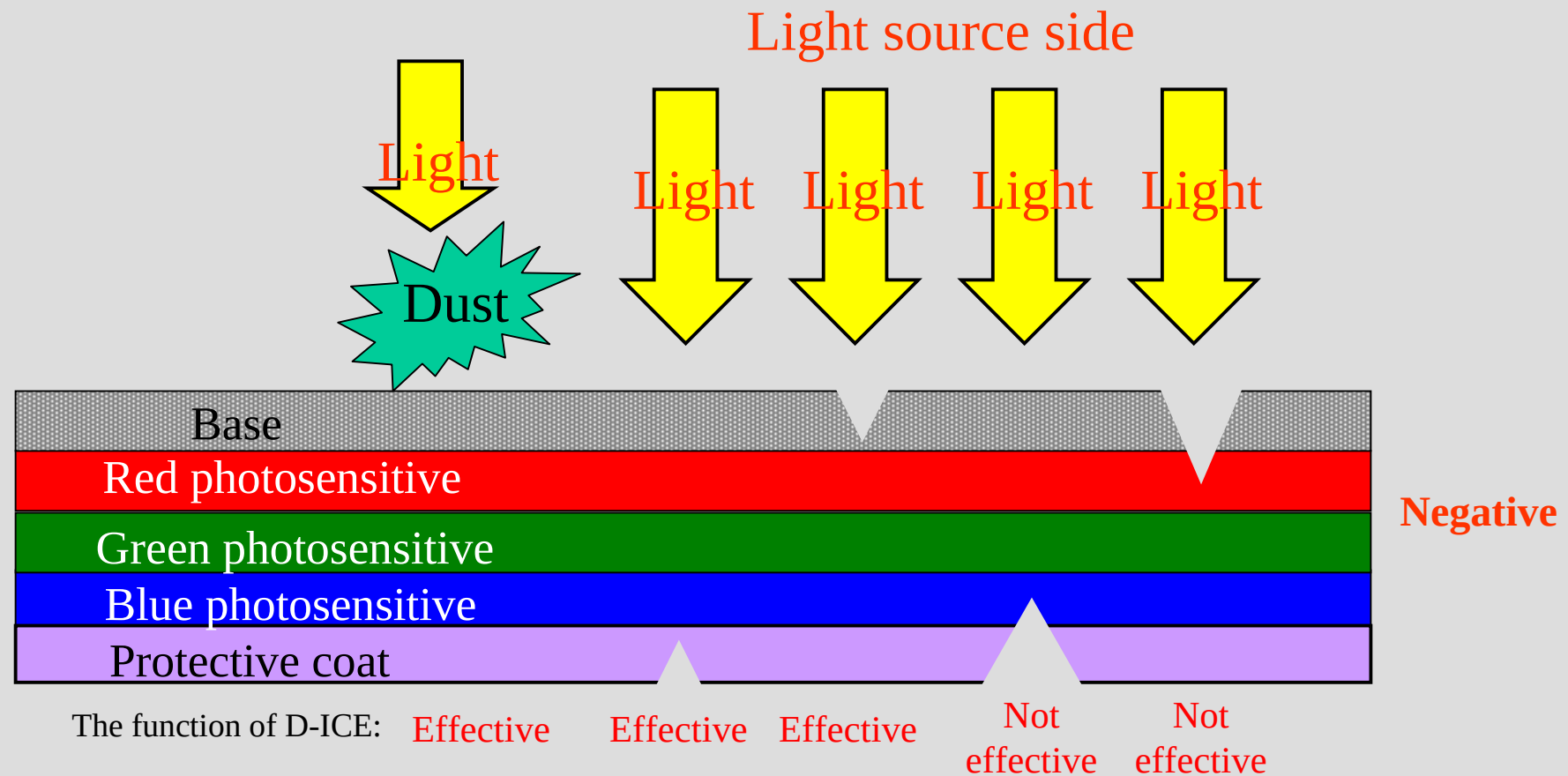
Corrections by Digital ICE

	QSS-29, 28
Correct function	The image is corrected automatically by Digital ICE (option)
Processing ability	The processing ability does not change even when this is functioned.

The conditions for functioning the Digital ICE

	QSS-29
PCB, power supply	Already attached when shipping from the factory
Installing the software	Reading the software of Digital ICE
Registration in the mode	Mark the check box in the “Operator selection” .

Scratches and dust which can be corrected



(Example: In case of color negative)

Scanner side

Colorimeter

- * The colorimeter is adopted for the precise color matching when carrying out the CMS.
- * The conventional colorimeter measures the density of the color of the paper. Therefore, there is a difference between the actual print and the measured value.
- * This colorimeter has an ability to distinguish like from the human's eye, and the precision of color matching between the monitor and print is increased.
- * There are three types of colorimeter
 - spectrophotometer, colorimeter, densitometer.The colorimeter is used for the QSS-30.
- * The colorimeter can measure the color in CIE-XYZ/Lab value, and color matching for difference devices is possible.



Paper sizes and advance way

Paper advance

In the QSS-30, there are two types of advance way.
Paper advance in single row, Paper advance in double rows
The condition of paper advance is basically as follows.

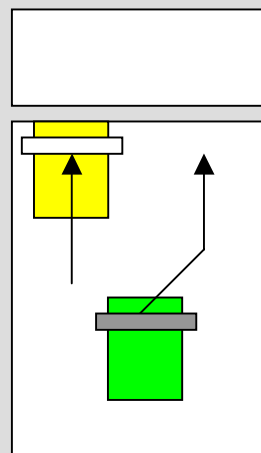
Condition of paper advance	Advance way
Paper width : 102 mm or less	In double rows
Paper width : 117 mm or more Leading of order 50 th print in one order When feeding the leading edge of paper When feeding the fogged paper When feeding the spliced paper	In single row

Explain in the “Movements” for the details of movements.

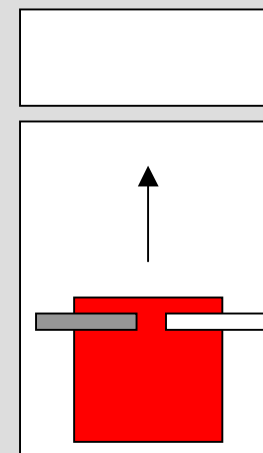


The paper lane selection is carried out in the paper advance section (reverse unit) after exposure.

Paper advance
in double rows



Paper advance
in single row



Check the actual machine.

Laser Engine

Laser:

Abbreviation of

Light Amplification by Stimulated Emission of Radiation

In the QSS-30, the exposure method by Visible Radiation is employed.

Cautions concerning the laser

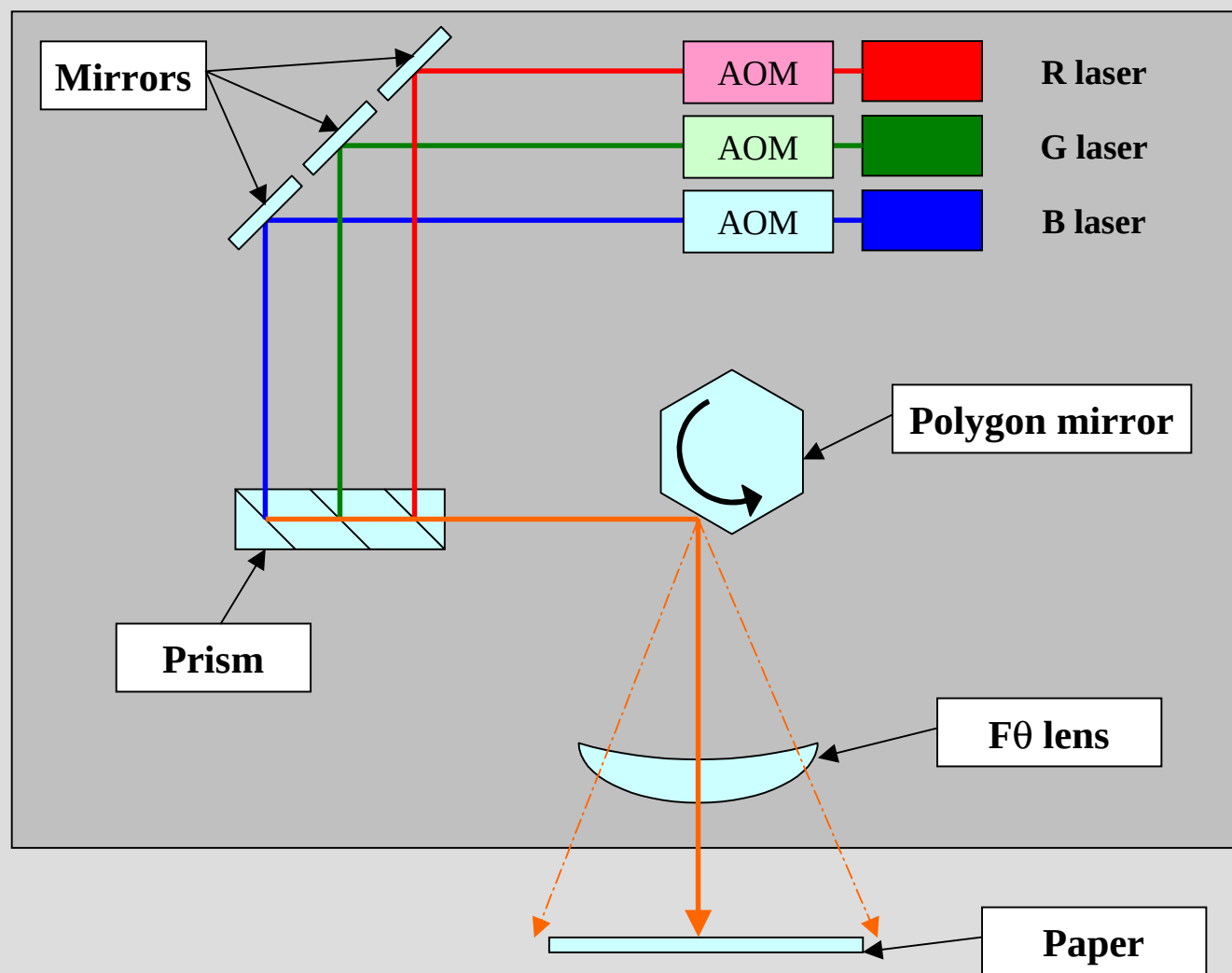
R laser is ON only when printing, but B, G laser is always ON. Before servicing the machine, be sure to follow the following instructions to avoid laser radiation exposure.

- *Do not perform any work other than that which is specified in the manual. Otherwise, you may be exposed to laser beam radiation.
- *Do not reflect the laser beam by inserting a mirror or the like in the light path of the laser beam.
- *Do not change the light path of laser beam.
- *Do not replace the optical parts while the electricity of the laser is ON.
- *Do not turn ON the electricity in the removed exposure advance unit.
- *Do not turn on electricity in the removed laser unit.
- *Do not disassemble the laser unit.

Printer Exposure Engine

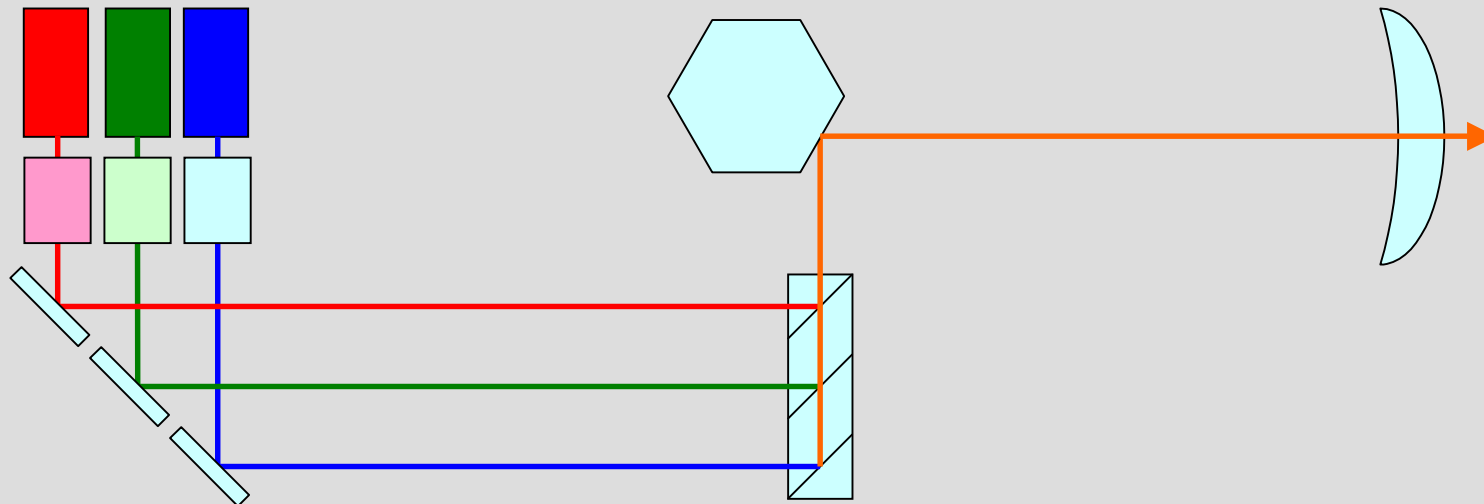
Exposure way	Line exposure method by the Laser engine
Output gradation	4096 gradation
Maximum exposure width	216 mm (8.5-inch)
Print resolution	320 dpi (Optical resolution –Main or the CCD line-) × 640 dpi (Scan pitch –Sub Scanning-)
Exposure speed	50.8 mm/sec
Light source	B laser, G laser, R laser

Structure of Laser Unit



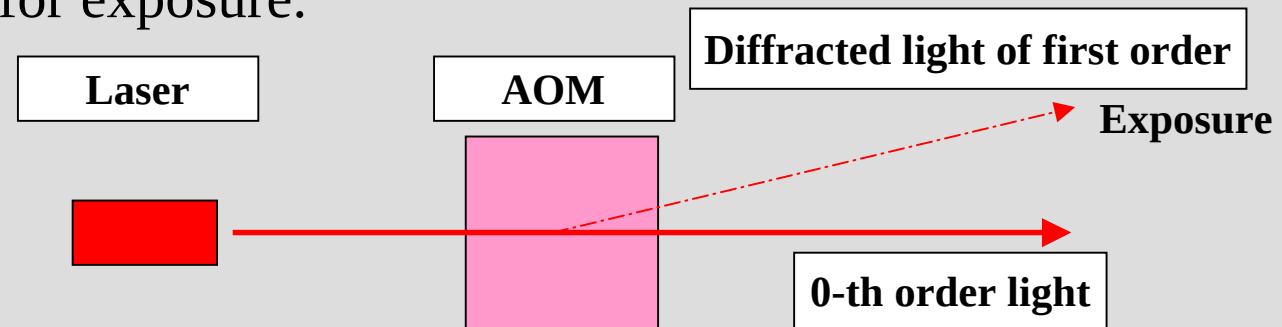
Explanation of laser unit

Laser	Visible Radiation Laser for R, B, B each
AOM	Acousto-Optic Modulator Adjusts the strength and weakness of laser light.
Mirror	Changes the direction of laser light.
Prism	Mix R light, G light and B light into one light.
Polygon mirror	Rotates in a certain speed and scans in the Optical resolution (Main line).
Fθ lens	Changes the angle of laser light according to the angle of incoming light, and maintains the constant speed.



Structure of Laser Unit (AOM)

- * AOM controls the strength of laser light.
- 1. When the voltage is not turned ON to AOM, the incoming laser beam passes through as it is. (0-th order light)
- 2. When turning ON the high frequency voltage, the ultrasonic waves occurs, and the diffracted light which is separated from 0-th order light occurs. (Diffracted light of first order)
- 3. Change the rate of 0-th order light and the diffracted light of first order by changing the high frequency voltage on AOM, and control the strength of light (diffracted light of first order) to be used for exposure.



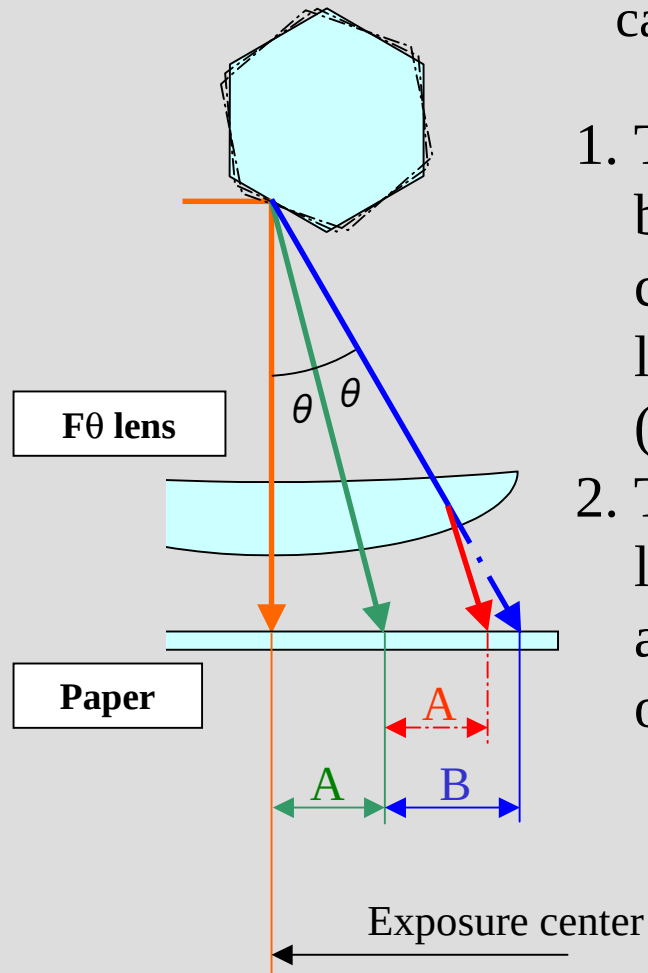
NOTE

The direct light is called 0-th order light.

Structure of Laser Unit (F θ lens)

Polygon mirror

* The F θ lens corrects the dispersion of linear velocity caused by the angle of incoming beam.



1. The travel (distance) on the paper is different between “the light outputted from the exposure center at the angle θ ” and “further outputted light at the angle θ ”
(As shown in the illustration, length A, B)
2. The F θ lens changes the angle of diffracted light according to the angle of incoming beam, and corrects the difference of travel (distance) on the paper.

Laser Exposure

Resolution

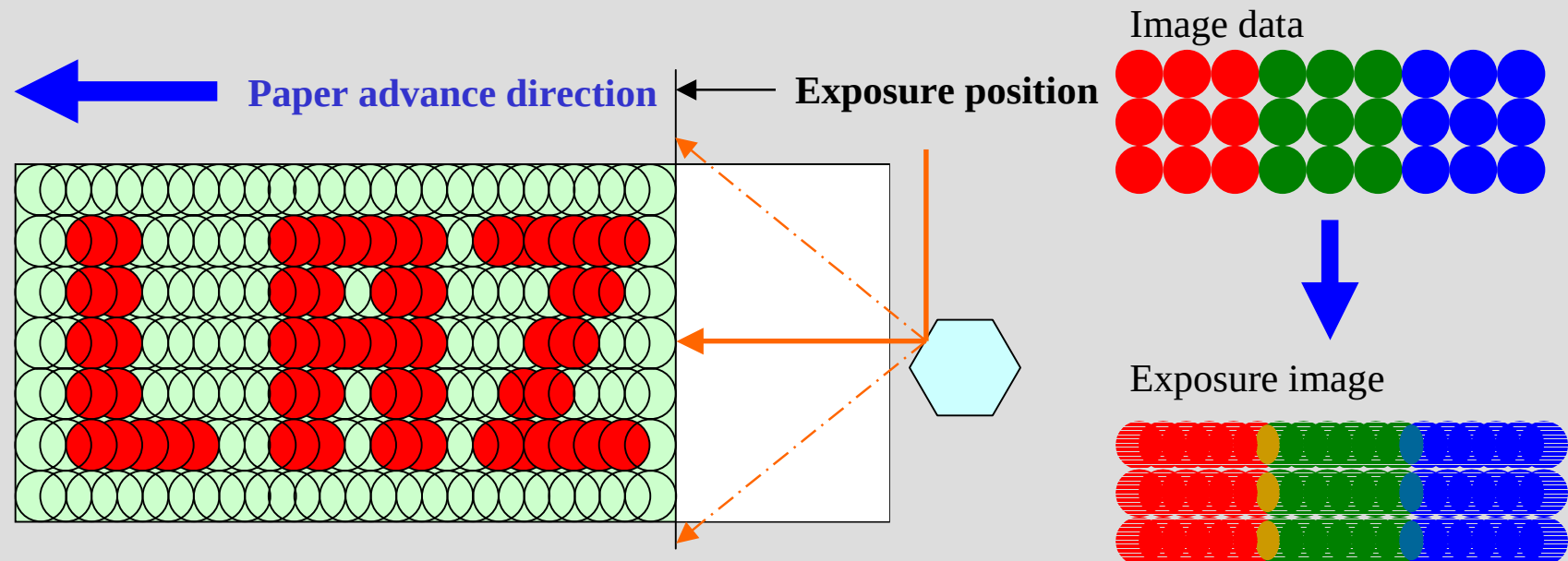
Optical resolution (Main or the CCD line): 320 dpi

Scan pitch (Sub Scanning): 640 dpi

In the main scanning: Expose for 1 dot pitch each

In the sub scanning: Expose for 0.5 dot pitch each

In the sub scanning, the same color is exposed in 2 consecutive dots.



Auto tuning

To get the stable outgoing laser beam, the temperature of laser is adjusted automatically. "The laser is being stabled" appears on the screen.

Fine tuning: To stable the output of laser when starting up a machine

Auto tuning: To correct the aging

Timing of execute

When turning ON the power supply	Fine tuning is executed.
In the close down checks	Auto tuning is executed.
Occasion	Possible to execute the auto tuning in the Function of laser unit adjustment.

Chapter 3 Operations

The point of this chapter

Purpose of study

- Study the operations for users.

Printing operations

Turning ON/OFF the power supply

Status display of LED

Setup during the start-up checks

Input from the flatbed scanner

Printing in the “Edit” mode

Details of back print data

Index prints

How to carry out the training

- Carry out the practical training, or explain the items using the sample prints.

Setup during the start-up checks

Daily setup	Execute once a day for each paper type to be used.
	Correct the temporary aging of exposure engine, light source and processing solution.
	Make a 18-step test print.
Weekly setup	Execute once a week. This is displayed instead of the daily setup.
	After carrying out the daily setup, carry out the printer profile calibration to correct the temporary aging of data characteristics for each printer. (Execute it for each paper type).
	Make test prints. 18-step setup prints (daily setup) 16-step setup prints (printer profiles)
	Carry out the uniformity (calibrator).
Monthly setup	Execute once a month. After completing the daily setup and weekly setup, execute it.
	Carry out the monitor profile calibration to correct the temporary aging of monitor.
	Adjust the monitor again.

Daily setup flow

Make a test print (18-step setup print)

When the light source upgrading (auto) (135 lane) is carried out during the program timer

**Light source upgrading
(135 lane)**

When the light source upgrading (auto) (135 lane) is not carried out during the program timer

Calorimeter calibration

Measure a test print.

Registration

Weekly setup flow

Daily setup is completed.



Make a test print. (16-step setup print)



Measure a test print.



Update the Printer profile data.



Registration

Monthly setup flow

Daily or weekly setup is completed.



Monitor color and temperature adjustment



Monitor brightness/contrast adjustment



Monitor profile calibration



Updating the monitor profile

Explanation of operations

- * Explain with the actual machine.
 - Start-up checks
 - Explanation of [ORDER] display
 - Output to HD
 - Input from CT-1
 - Explanation of HELP
 - Explanation of [MENU] display
 - Explanation of [HELP]

- * Explanation of printing operations
 - Carry out the practical training.

Explanation of modes

- Paper fitting
Cut/Real Size/Overall
- Correction of JUDGE images
- Pass setting of HD storing
- NCE mode

CH export data

NCE mode

It is possible to control the output of laser and correct the color (Cyan, Yellow, etc.) around the letter by inputting the correction value in the “NCE” mode.

(e.g.)

Outline characters on the black background

The part around black letter on the white background

However, the trend of color changes depending on various conditions (Font type, Font size, condition of processing solution, etc.). So, even if you make a perfect correction to a condition, the same quality cannot be gotten for the other conditions.



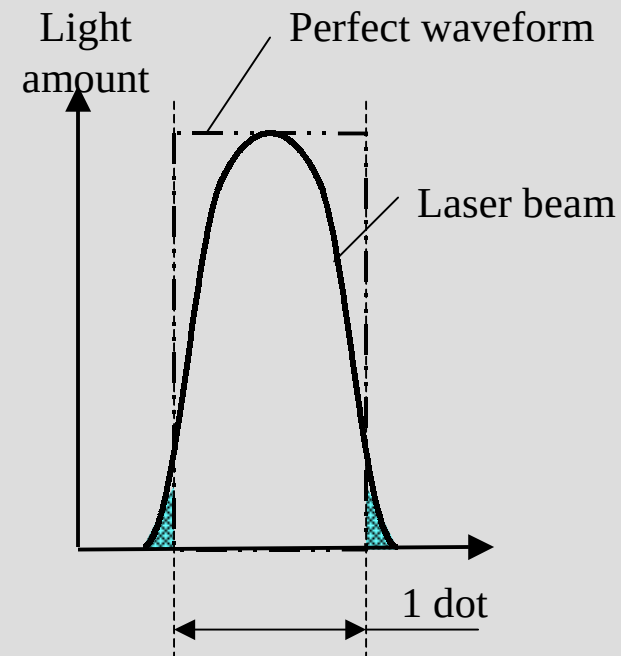
Description*****

Light amount of laser is not constant in one dot, not like the ideal waveform (illustration). The light amount is maximum at the center, and it is getting smaller gradually as it is close toward the radial rake.

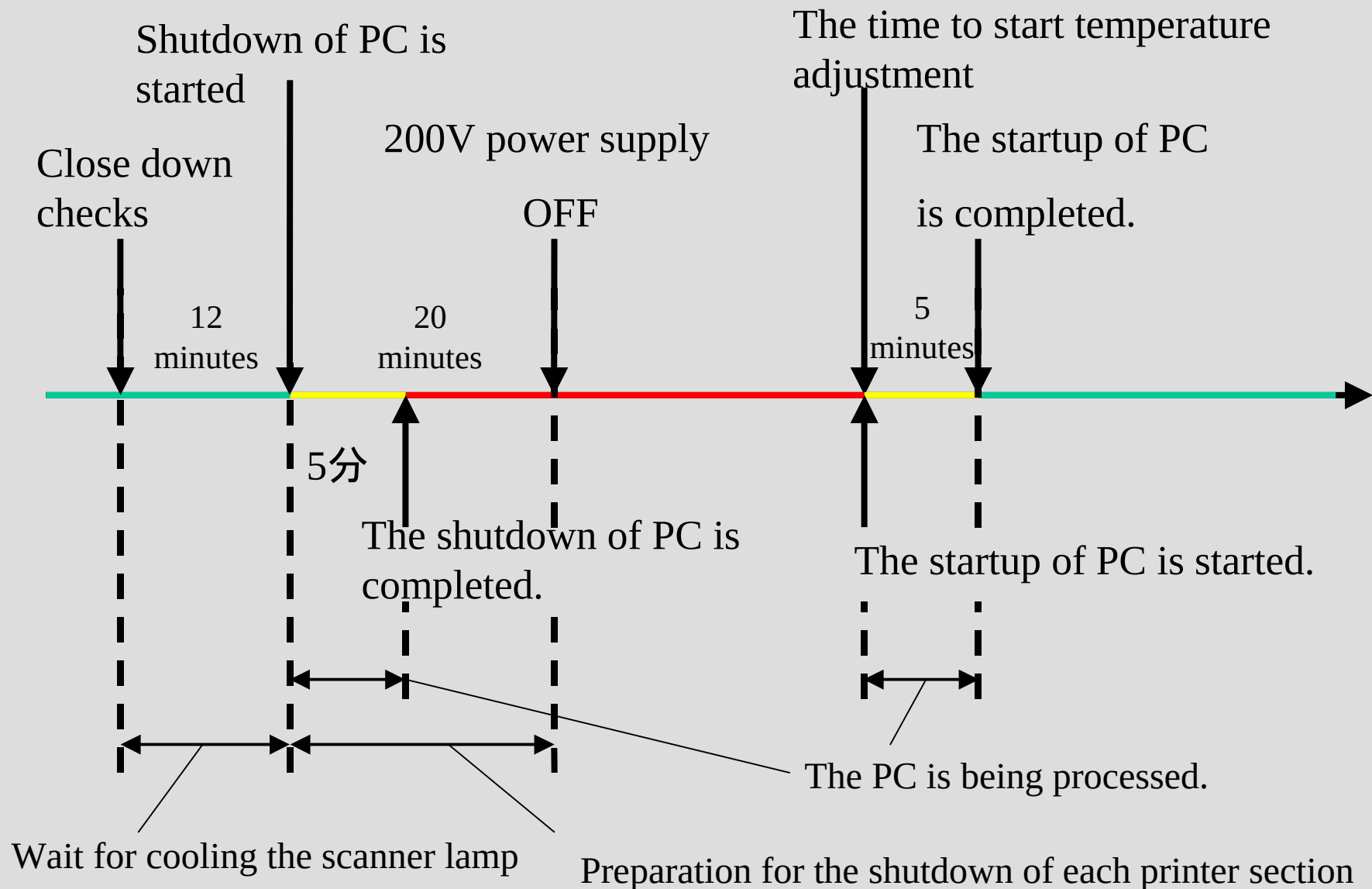
Therefore, the low density part appears on the half-tone dot meshing part (illustration), and this part may be colored Cyan, Yellow, etc. depending on the chromogenic property of paper.

It is not noticeable in the consecutive color. But, it is noticeable in the following scene.

The scene that the density difference appears clearly, especially outline characters on the black ground, black letter around the white background.



ON/OFF procedure of power supply



Normal shutdown movement

(Close-down check is completed.)

Scanner lamp is OFF

“Program timer is activating.” is displayed (on the monitor).

The PC is shutdown. (12 minutes later after the close-down check)

The power supply (200V supply) is OFF. (32 minutes later after the close-down check)

The power supply of peripheral CPU and cooling fan is OFF.

Normal start up movement (when the program timer is activated.)

During the Program timer

(“32 minutes later after the close down check” to “The time to start the temperature adjustment”)

(The time to start the temperature adjustment)

The power supply is ON. (200V supply) The power supply of peripheral CPU is ON.

The PC is started up.

“The processing solution temperatures are being adjusted” is displayed (on the monitor).

After the temperature adjustment is completed, “Would you like to proceed to the operation mode?” is displayed (on the monitor).

Press [YES] key to go to the operation mode.

How to start-up except from the program timer (when the breaker is turned ON)

- Within 12 minutes after the close down check is completed.

Press [YES] key to go to the Operation mode.

- During the start up or the shutdown of PC

(For 5 minutes “after 12 minutes have passed after the Close down check”,
For 5 minutes after the temperature adjustment is started.)



In this situation, do not start-up the PC.

The forced termination is done by pressing the power switch of PC, and the PC may be defective.

- “The shut down of PC is completed” – “During the program timer” – “Before starting up the PC”

(“17 minutes after the close down check is completed” to “the time to start the temperature adjustment”)

The PC is started-up by pressing the system switch, and then the QSS software starts up and the power supply is turned ON to the printer/processor/scanner section.

How to start-up after the breaker is turned OFF

- * Turn ON the breaker, press the power switch of PC and the PC starts up. 3 minutes later, the power supply of printer/processor/scanner section is turned ON.**

How to turn OFF the breaker

- * How to turn OFF the breaker after the close down check
(e.g. When you do not use the function of the program timer)
When 12 minutes have passed after the close down check is completed, the shutdown of PC is started. Confirm that the power LED is turned OFF, and turn OFF the breaker.**
- * When turning the breaker OFF in the case of troubleshooting, etc, press [F] key in the “Close down check” mode and select “Turn OFF the power supply”. After confirming that the power LED of PC is OFF, turn OFF the breaker.**

Caution

- *Turn OFF the scanner lamp, and wait for 10 minutes or more. After that, turn OFF the breaker. The lamp may be damaged.**

How to turn OFF the breaker when the PC is locked

1. Check the LED of HD.

When the LED of HD is lighting or blinking, the HD is activating.

If turning the power supply OFF when the HD is activating, the HD may be damaged.

Wait until the LED is turned OFF.

2. Turn OFF the power supply of PC by pressing the SW of PC for 4 seconds or more.

When the power supply of PC is not turned OFF even after pressing the system switch for 4 seconds or more, restart the system by pressing the reset switch for 4 seconds.

3. Turn OFF the breaker of processor.

Wait for approx. 10 seconds after turning the breaker OFF. And then turn the breaker ON.

How to turn OFF the breaker in an emergency

- * When turning OFF the breaker in an emergency, turn OFF the breaker of the processor.**

The UPS is activated and the PC is shutdown.

**The time for the PC shutdown changes depending on the status of PC.
(several minutes to 20 minutes)**

Status display of AFC

Ready lamp	Condition of display
Lighting Green 	Possible to process films (You can insert a film.)
Blinking Green 	Film is being processed. (You cannot inset a film).
Blinking Red 	Impossible to process films (You cannot process a film.) *The error occurs. (You cannot process a film.) * The error occurs. (You cannot print.)
Dark 	Impossible to process films (You cannot process a film.) *When the “Film” is not selected for “Image input” in the print channel setting. *During the start-up checks and close-down checks *During the program timer *When the message “Insert a film.” does not appear on the adjustment mode. *During the initial movement

Details of the back print

* Film and media except 240

NORITSU <12> 005 © FBS 12

(X) (I) (K) (D) (E) (F)

284 15 +1+1+1+1 +30 AC01 Acs -10 Ach -10 AS02 SA200 GR10 RE01 SF02 FC01 XF02 R090 Z80

(J) (L) (M) (N) (O) (P) (Y) (Z) (Q) (R) (S) (T) (V) (W)

* For 240 (TYPE1)

BIRTHDAY EL25 MGhi FFn BVvh Alh PAC SUn CH1 LAB01 © CD 12

(A) (B) (C) (D) (E) (F)

01.05.29 11:57A 001-001 (12) 284 005 15 +1+1+1+1 +30 *Digital correction data

(G) (H) (I) (J) (K) (L) (M) (N) (Same with films except 240)

* For 240 (TYPE2)

BIRTHDAY EL25 MGhi FFn BVvh Alh PAC SUn CH1

(A) (B)

29/MAY/01 11:57A ID001-001 (12)FTPM LAB01 ©

(G) (H) (I) (C) (D)

Details of the back print

* Editing

BIRTHDAY 123 © 12
(A) (K)(D)(F)
284 15 <CUSTOMERINFO.mdb 1234
(J) (L) (1) (2)

* Back print data only for editing

(1)	File name for customer information	(2)	Customer number for customer information
-----	------------------------------------	-----	--

(A)	Title	(K)	Print count
(B)	Camera information	(L)	Print channel
(C)	LAB ID	(M)	Color, density correction (YMCD)
(D)	Copyright mark	(N)	Scanner correction
(E)	Input medias	(O)	Auto contrast correction value
(F)	Template	(P)	Auto sharpness correction value
(G)	Date, Time 240 TYPE2: the month is displayed in 3 letters (English letter).	(Q)	Red-eye correction value
		(R)	Soft focus correction value
		(S)	Color conversion Color image: FC Monochrome: MoF Sepia: SeF
(H)	Film ID (FID) 240TYPE2: "ID" is displayed before the number.	(T)	Cross filter correction value
		(V)	Rotation angle of the image
(I)	Frame number 240TYPE2: FTPM or SERIES is displayed after the frame number.	(W)	Zoom and crop of the image
		(X)	Backprint
		(Y)	Chroma correction
(J)	Order number	(Z)	Graininess repression correction

Index print sizes

* Normal index prints

Name	3HS	3R	3HD	3W	4R	4HD	5R
Sizes	82.5 x 158	89 X 127	89 x 158	89 x 178	102 x 152	102 x 178	127 x 178
135/120/110	△	✓	✓	-	✓	✓	✓
240	-	✓	✓	✓	✓	✓	✓
Medias	-	-	-	-	✓	-	-

Name	6R	6HD	6W	8R	8HD
Sizes	152 x 203	152 x 254	152 x 305	203 x 305	203 x 356
135/120/110	✓	✓	✓	✓	✓
240	✓	✓	✓	✓	✓
Medias	-	-	-	✓	-

✓ : Available

△ : Available with 29 frames or more

— : Not available

Types of index prints

Normal index prints	Make normal index prints. The data for displaying on the PJP mode is used.
Label index prints	Index print for the media case size of storage media No index print for smart media, PC card and compact flash
Contact Print Style Photos	Make Contact Print Style Photos. IX240 and medias are not supported.

Background color for index prints

*8 colors can be selected as a background color of an index print.

1. Gray



2. White



3. Pink



4. Yellow



5. Orange



6. Green



7. Light blue



8. Purple



Label index prints

Types of media	FD	MO	Zip	CD
Size	89 x 114	89 x 117	97 x 120	120 x 120
Format (number of frames)	6, 20, 35	6, 20, 35	6, 20, 35	80
Note	The number of frames are switched automatically.	The number of frames are switched automatically.	The number of frames are switched automatically.	The number of frames are fixed.

Index print sizes for Contact Print Style Photos

Paper sizes for 6-frame

Name	CP6_1	CP6_2	CP6_3	CP6_4	CP6_5
Paper width (minimum width)	82.5 mm or more	82.5 mm or more	120 mm or more	165 mm or more	203 mm or more
Paper advance length	228.6mm	228.6mm	228.6mm	228.6mm	228.6mm

Paper sizes for 4-frame

Name	CP4_1	CP4_2	CP4_3	CP4_4	CP4_5	CP4_6	CP4_7
Paper width	82.5 mm or more	82.5 mm or more	120 mm or more	152 mm or more	152 mm or more	152 mm or more	152 mm or more
Paper advance length	152 mm	152 mm	152 mm	152 mm	191 mm	227 mm	263 mm

Name	CP4_8	CP4_9
Paper width	152 mm or more	152 mm or more
Paper advance length	300 mm	336 mm

Size:

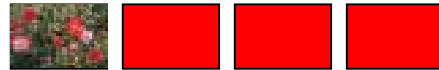
When printing the paper to be used with the minimum necessary paper width.

Only 135F is supported.

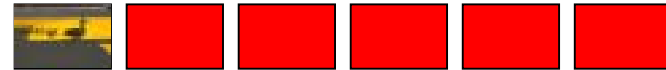
Index print sizes for Contact Print Style Photos

*Contact index prints

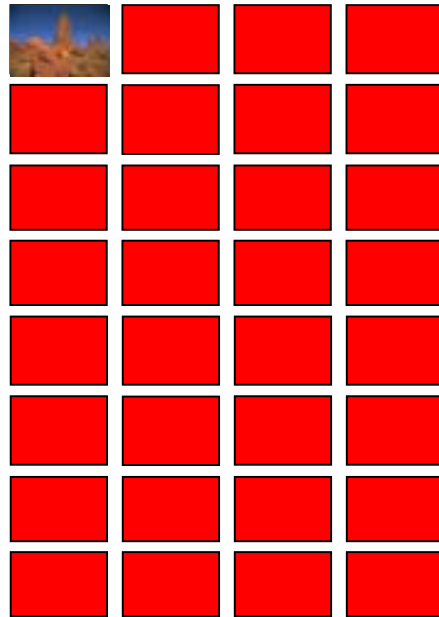
CP4_1



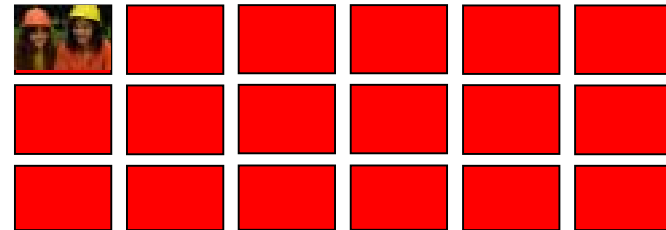
CP6_1



CP4_8



CP6_3



Practical training

- Explain the modes, checking the actual machine.
- Start up checks
- Explanation of ORDER screen
 - Output to HD
 - Input from CT-1
 - Input from compact archive
- Explanation of MENU screen
- Explanation of HELP screen
- Explanation of printing operation
 - Carry out the practical training.

Chapter 4 Installation

The point of this chapter

Purpose of study

- Study so that the trainees can install the QSS-30 (LPP-1200).

The width for carrying a machine

Outdrawing

Required parts when installing a machine

PC peripherals

Setting the language specification

How to carry out the training

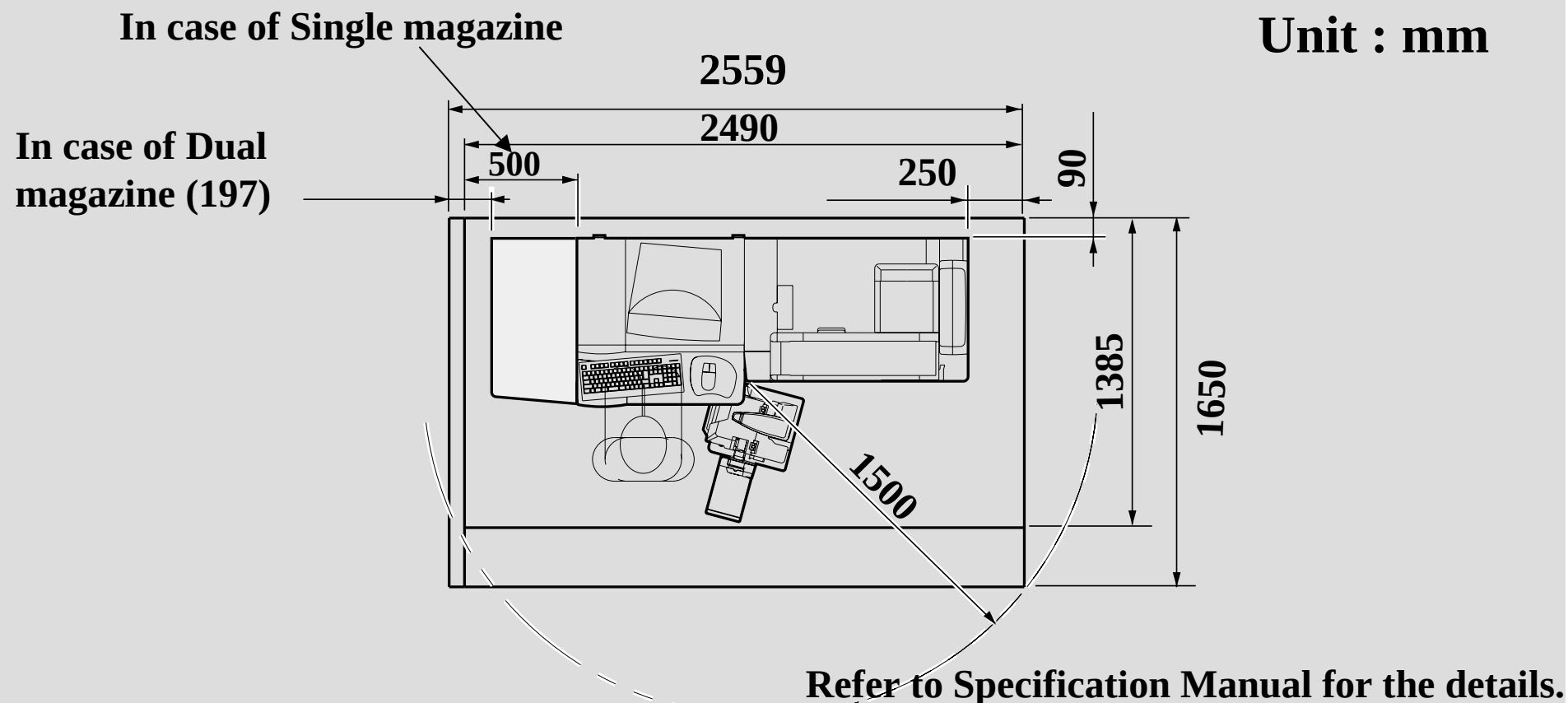
- The trainee will provide an oral explanation of the caution points, referring to “Installation Manual” and a machine.
- Carry out the mechanical adjustment or installation of options in the other chapter. You do not carry out the practical training here.

The width for carrying a machine

Unit [mm]

Name of Machine	Minimum height	Minimum width
LPP-1200	1,184	766.5
S-1200	706	399

The space for installation



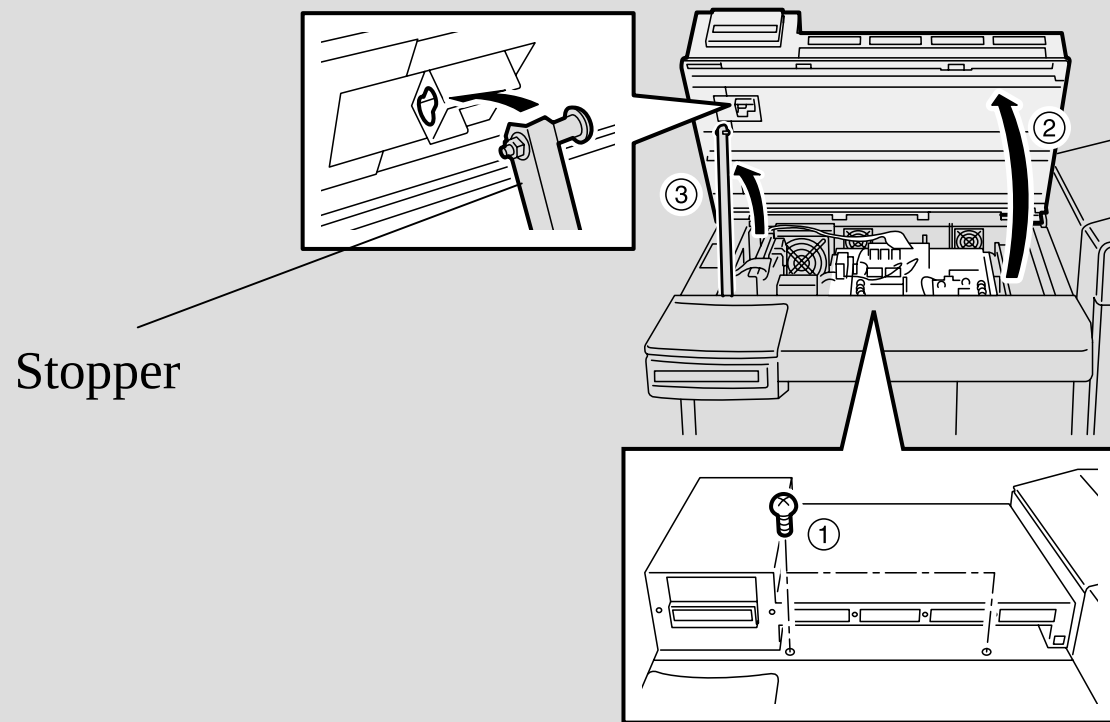
IMPORTANT

In the Specification manual, the back space is 90 mm or more. But, 190 mm or more is required to open/close the PC control unit. If there is enough space for installation, we recommend to leave 190 mm or more in the back side of machine.

Close/Open the PC control unit (190 mm in the back side of machine)

1. PC control unit

Point 1 : When opening/closing the PC control unit, be sure to set the stopper with the cover of PC control unit.



G058054

Lifting a machine (LPP-1200)



Support wood

Packing Angle

***Lift a machine with rope,
as shown in the illustration.**

Caution

***Place the support wood,
referring to the “Indication of
lifting the machine” manual.**

***Be careful so that the power is
not applied on the table.**

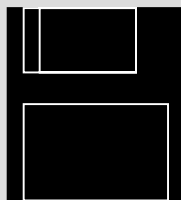
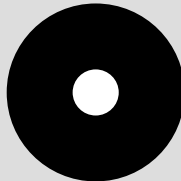
Packing items (LPP-1200)

Packing parts	
LPP-1200 main body	Filter pipe
Ribbon Cassette	Chemical filter
Mouse pad	Filter case
Assist jack-bolt	Print conveyor unit 1
monitor	
Paper guide (print conveyor unit 2)	

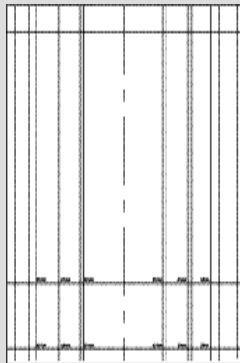
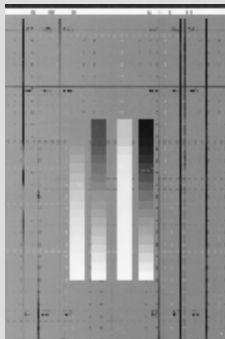
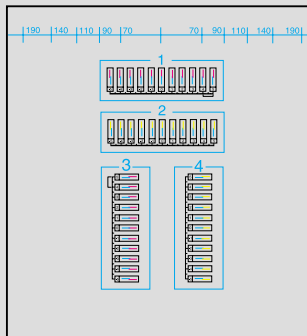
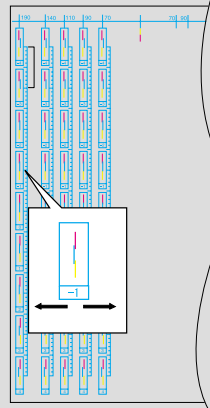
Packing items (S-1200)

135/240 AFC	Film receiving box
Scanner lamp	

Packing items (accessories)

Types	Name		Description
	INITIAL DATA 1	For Printer and Scanner	Contains the adjustment data for each machine One FD for printer / scanner section One FD for processor section
	INITIAL DATA 2	For Processor	
	SYSTEM PROGRAM		Contains the necessary system files to activate the system
	PROFILE DATA		Contains the profile data
	PC attachments		Recovery CD for OS, Operator's Manual, driver software, etc. Necessary for the maintenance of the PC attachments

Packing items (Sample prints)

Paper supply A Paper supply B 	Mechanical adjustment 	Exposure position adjustment 	Exposure position fine adjustment 
Check the zigzagging of paper supply unit A and B. Exposure image correction	Exposure image correction Exposure timing correction Exposure zoom rate correction Exposure center correction	Check that the “dots in each color of laser” overlap correctly. Exposure center correction (Master)	Check that the “dots in each color of laser” on both sides of print overlap correctly.

Practical training

*** Install a machine, referring to the Installation Manual.**

Location of PC peripherals

Mother board



FD

MO

Card reader

ZIP

HD

DVD-RAM

CD-ROM · R/RW

SCSI ID No.

Drive	ID No.	Note
MO	0	
CD-ROM, CD-R/RW	-	Secondary IDE
PC card	2	
Smart media	3	
Compact flash	4	
None	5	Not in use
DVD-RAM	6	
SCSI board	7	
ZIP	-	Primary IDE
HD	-	Secondary IDE
FD	-	FD connector
Flatbed scanner	-	USB

Cautions when attaching the PC peripherals at site

✓ = **necessary**

Drive	Installing the drives	Setting and Check of the SCSI ID and IDE jumper switch
ZIP	✓	✓
MO		✓
CD-R/RW	✓	✓
DVD-RAM	✓	✓
Card reader		✓
Flatbed scanner	✓	

Allocation of drives

- The drive letter differs depending on the installing turn of the drive, etc.
- Set the drive allocation in the “Media setting” of “Option registration” by the drive letter of OS.

If you set the wrong drive letter, the malfunction occurs. (e.g. it accesses to the wrong drive.)

Be sure to set the drives correctly. Set the same drive with the drive letter of OS.

- The drive letters below are fixed.

A: FD C: Hard disk

- Refer to the Service Manual [3871] for the allocation of drives.

Setting the language specifications

- When you use it in the other languages except English, it is necessary to set the dictionary of language which is to be used. And install the translated QSS message data.
- When the various kinds of functions (e.g. postal code dictionary) are necessary, carry out the setting again.

Chapter 5

Setup

The point of this chapter

Purpose of study

- Study about the setup.

Initial setup

Monitor setup

Paper specification registration

Print channel setting

Emulsion number change

Scanner slope correction

Outline of CMS

Profile

How to carry out the training

- Carry out the practical training, or explain the items using the sample prints.

Setup when installing a machine

- There are two patterns of setup procedure when installing a machine to shorten the installing time. There are two procedures for the conditions below.

During the temperature adjustment

After the setup is completed.

- It is not always necessarily to follow the procedure except for the setup when installing a machine.

Refer to the Service Manual 7001, 7002.

Details of the Initial setup

1. Setting the exposure amount (complete in one time)

The difference of color characteristics (paper + solution + light amount) for each machine is corrected, and set the parameter to get the target density.



2. Paper gamma setup (maximum: 3 times)

Using the data which was estimated in the step 1, make a 18-step test print and set the parameter to get the target density.

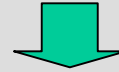


3. Printer profile calibration (complete in one time)

Carry out the printer color matching for each paper type.

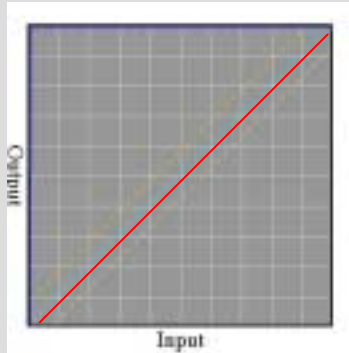
This is carried out based on the profile data which has already been registered.





Carry out the printer profile calibration for each paper specification.

And carry out it also in the weekly setup. (for paper type each)



This graph is the result of test print measurement. Three lines for B, G, R are displayed.

It is ideal if all of three lines slant at the angle of 45° .

This is the standard for checking the tendency of calibrated data.

4. Updating the AOM data (once)

Adjust the gain of light source amount outputted from the laser.

Update the characteristic data of AOM bias.

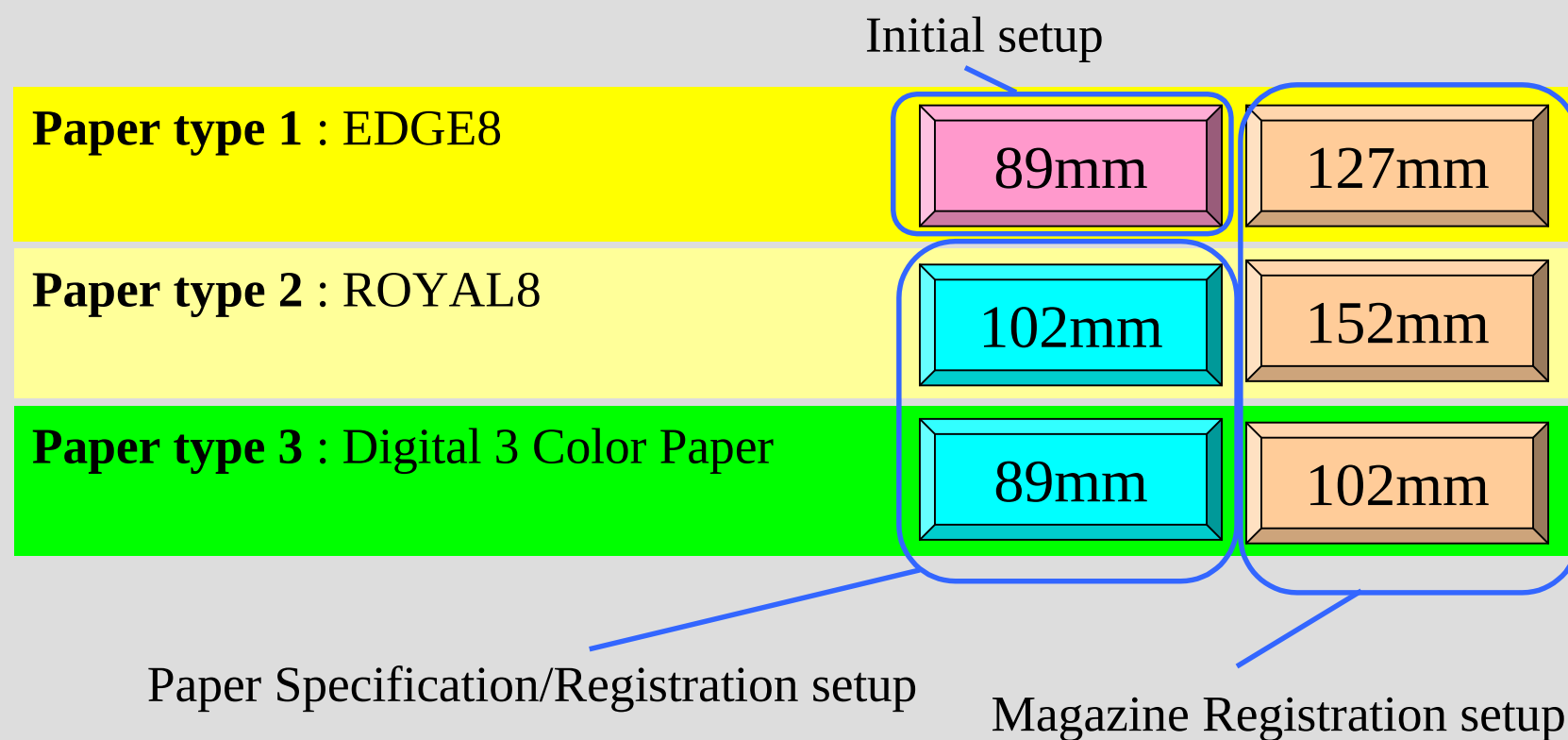
NOTE

Tester print: 18-step setup print (number of prints: 3)

Setup flow

Explain the setup flow when carrying out the installation.

(e.g.) Prepared paper types

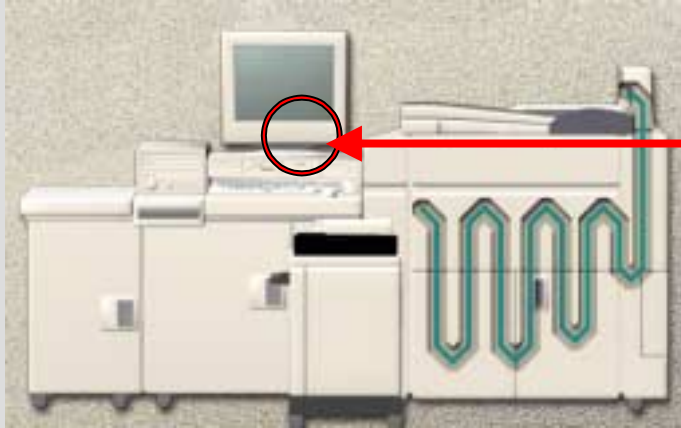


Monitor setup

1. Monitor brightness adjustment

- * Color and temperature setting (6500K)
- * Contrast adjustment
- * Brightness setting

Adjust it, referring to the Operator's Manual of the display monitor.



Adjust the color of the monitor here.

2. Monitor profile calibration

Monitor setup

3. Monitor gamma correction

The difference occurs between the color of print and that of monitor, depending on the light source of the place where you work.

Improve the precision of color matching by setting the color difference freely.

Make a test print, compare the color chart with the monitor and adjust it.

Comparison of the scanner slope correction for films



	Corrections in the QSS-29	Corrections in the QSS-30
Film type	Negative/Positive 135F, P, H, HD, 110, 240 6 x 4.5, 6 x 6, 6 x 7, 6 x 8, 6 x 9	←
Slope	Master, Reference + DX	←
U.N.O	Correct, checking the images.	←
How to input	Input the value. Balance memory shift is not available	←
Other corrections	Carry out the contrast and saturation adjustment, checking the images.	←

Initial setup (Practical training)

* Carry out the initial setup.

Initial setup

Paper Specification/Registration Setup

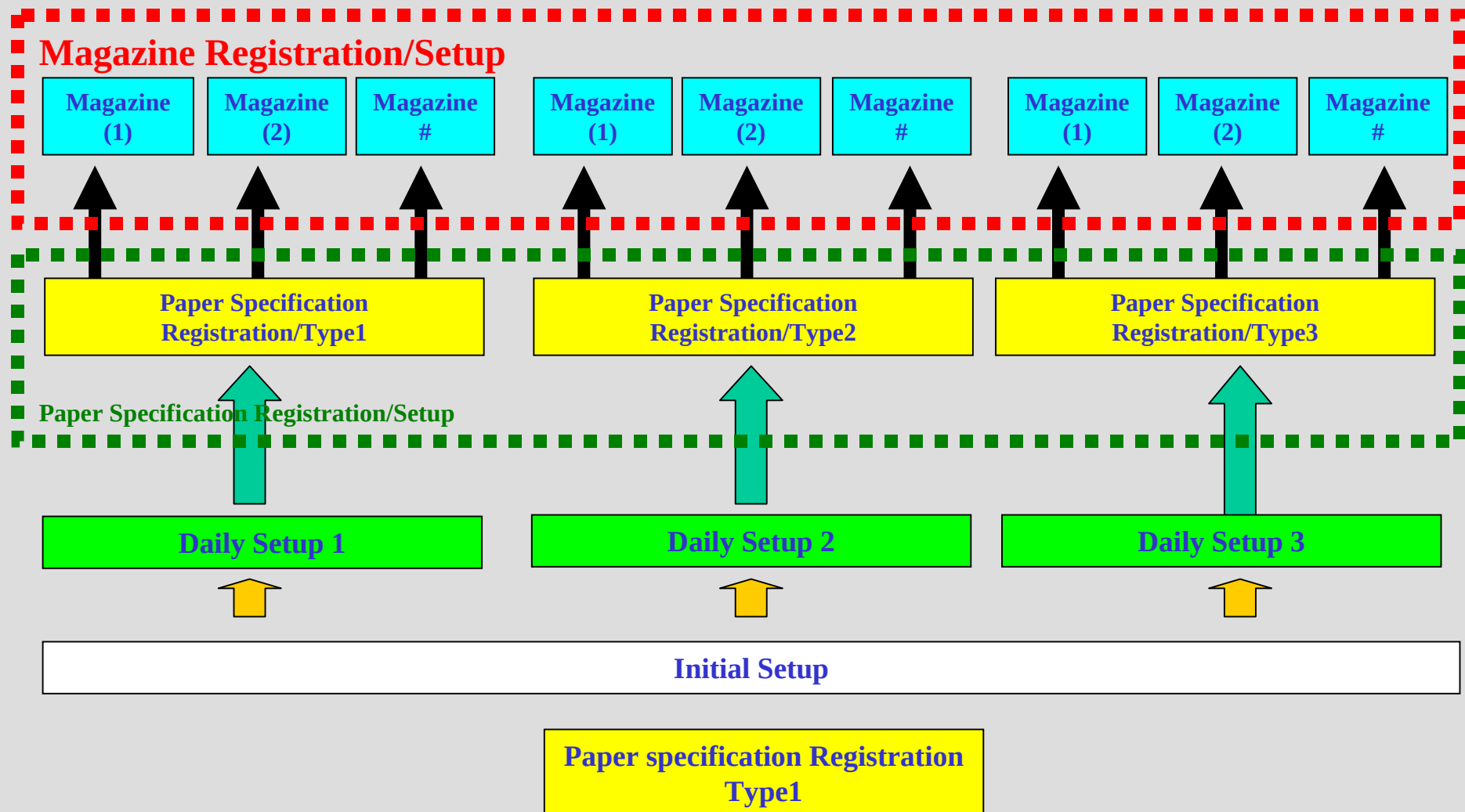
Magazine Registration Setup

Monitor setup

Making print channels

Making print channels

Structure of the setup data



Paper registration and setup



Kinds of registration	Contents
Paper Specification Registration/Setup	Register the paper type and the magazine which are to be used. Up to 3 types can be set.
Magazine Registration/Setup	When newly adding the paper with different paper width and different paper surface, register a new magazine and carry out the correction.
Emulsion number change	Correct this when the paper specification and the emulsion number is changed.
Paper setup	Carry out the color correction for magazine each. In “NCE” of “Function” mode, the color around the letter is corrected. (e.g.) The part around black letter on the white (light-color) background Outline characters on the black background. This is not the correction for the whole print.

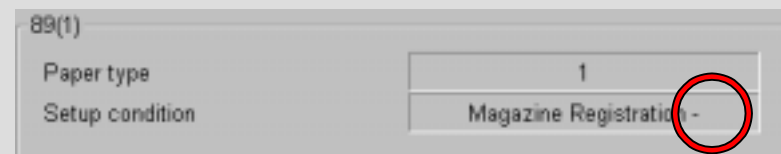
Emulsion number change

You can check the setup status which is used for emulsion number change.

“OK” or “-” is displayed.

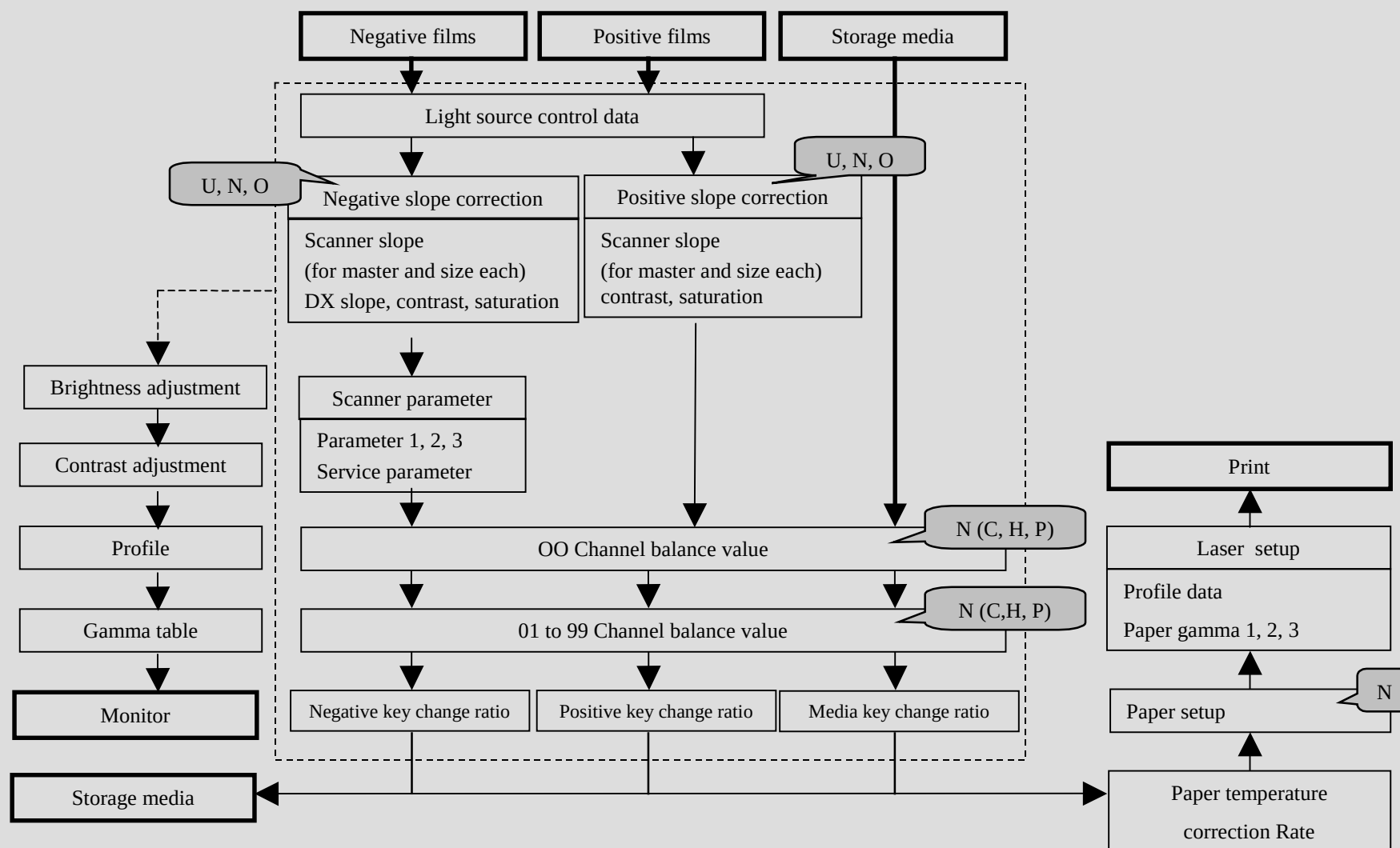
The emulsion number change is possible when “OK” is displayed for the paper setup or magazine registration.

In the other cases, set it so that “OK” is displayed. After that, carry out the emulsion number change.

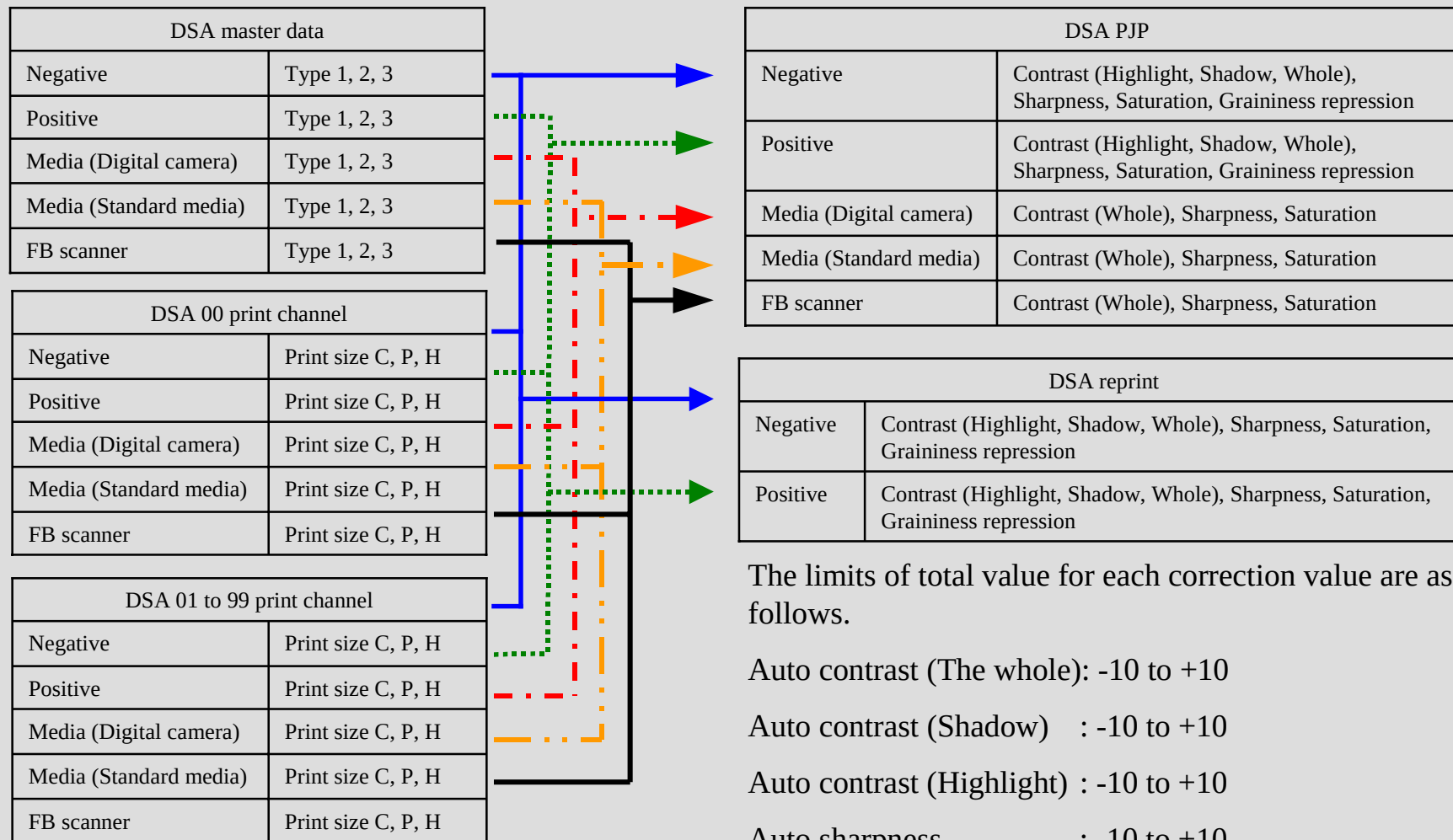


Sign	
Setup -	[Paper Specification Registration Setup] has never been carried out or has not been completed yet.
Setup OK	[Paper Specification Registration Setup] has been completed successfully.
Magazine Registration -	Not to be registered in the [Magazine which is to be used for the setup]. Only [Magazine Registration] is carried out. But, [Magazine Registration Setup] has never been carried out or has not been completed yet.
Magazine Registration OK	Not to be registered in the [Magazine which is to be used for the setup]. Only [Magazine Registration] is carried out. And, [Magazine Registration Setup] has been completed successfully.
--	Both of [Magazine which is to be used for the setup] and [Magazine Registration] are not be carried out.

Color data configuration



DSA data configuration



The limits of total value for each correction value are as follows.

Auto contrast (The whole): -10 to +10

Auto contrast (Shadow) : -10 to +10

Auto contrast (Highlight) : -10 to +10

Auto sharpness : -10 to +10

Saturation : 50 to 200

Graininess Repression : 0 to 10

Each DSA correction value exists separately.

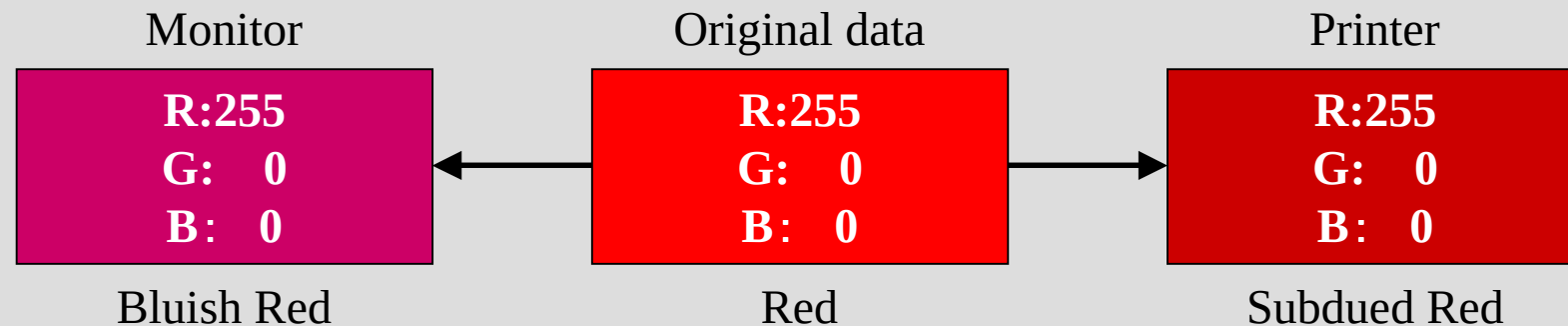
On the DSA screen of PJP, the total correction value is displayed. And, you can also do the correction here.

Outline of CMS

CMS (Color Management) in the QSS is to transmit the color information correctly (Color Matching). Therefore, the beautiful color is expressed beautiful as it is, and the subdued color is expressed subdued as it is. It is not to correct the color and make the color beautiful.

When outputting (image display or print) the same image data (RGB color space) with the different output device (monitor or printer), the expressed color is different by looking at.

This is caused by the difference of expressional characteristics for color depending on the devices.



To clear the color difference, CMS (Color Management) (Color Matching) is executed.

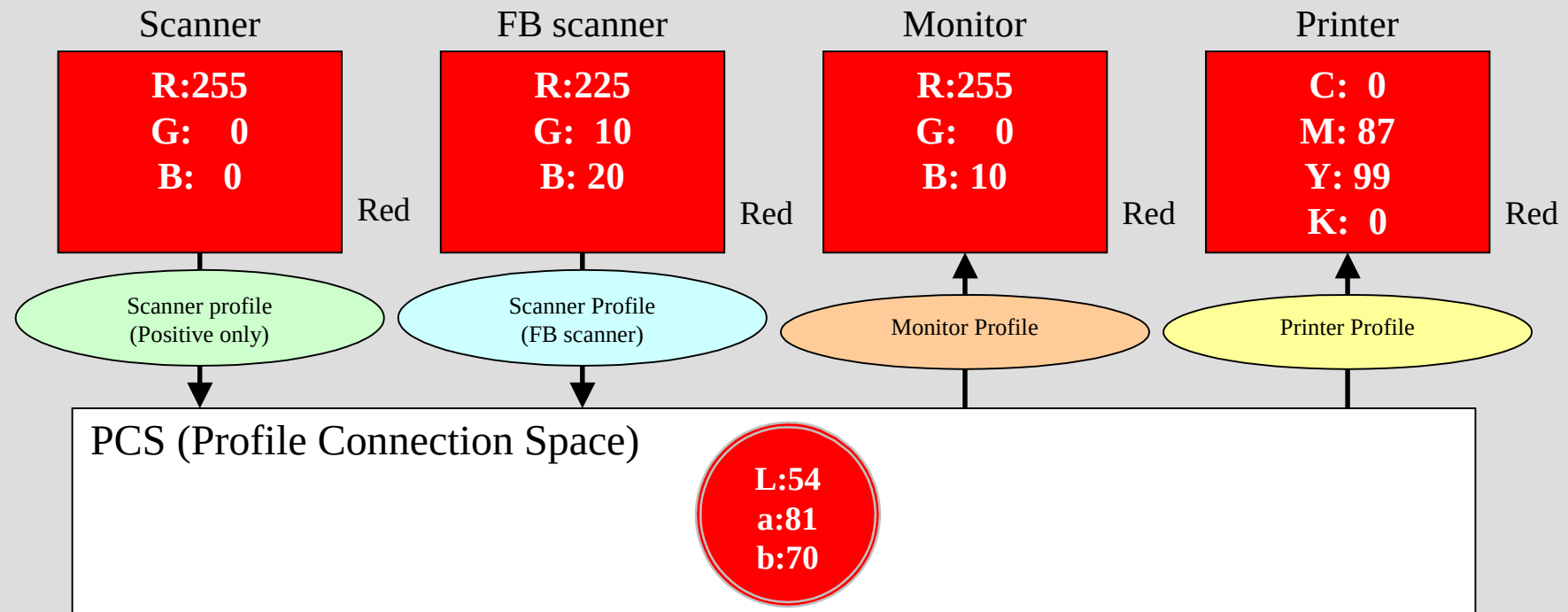
Outline of CMS

Make a standard data (Lab color space) for CMS.

The standard data is stored in the virtual space called “PCS” which is at the center of device.

INPUT: Convert “RGB color space data which is inputted from the input device” into the “Lab color space data” thorough the scanner profile.

OUTPUT: Convert “Lab color space data” into “RGB (or CMYK) color space data” through the monitor profile (or printer profile).



Scanner profile

The scanner profile is stored in the following place.

SCN_DIR (The place where the scanner profile is stored)		
File name	Contents	Note
S0000100.nkp	Profile data for Microtek ScanMaker X6	Not in use
S0010000.nkp	Profile data for Umax Astro 3400	
S0990100.nkp	Profile data for positive films	

Printer profile

The profile data is stored in the following place.

PRN_DIR (The place where the printer profile data and the printer calibration data is stored)		
File name	Contents	Note
p010###00.nkp	Printer Profile Basic data (The data which was registered when shipping from the factory.)	
p010###00.cal	Printer Calibration Basic data (The data which was registered when shipping from the factory.)	
p110###00.nkp	Printer profile data which is actually used	Changes by the profile calibration (Weekly setup)

The printer profile exists for type of processing solution each.

“p110###00.nkp” is calculated and made by the measured value and basic data (p110###00.nkp, p010###00.cal) in the “Paper Specification Registration/Setup”.

Monitor profile

The printer profile is stored in the following place.

MON_DIR (The place where the monitor profile data and the monitor gamma adjustment data is stored)		
File name	Contents	Note
m0010000.nkp	Monitor Profile Basic data (The data which was registered when shipping from the factory.)	Basic data which is set for type of monitor (Maker, Lot)
m1010000.nkp	Monitor Profile Basic data (The data which was registered when shipping from the factory.)	Initial data which is measured by the colorimeter (Contains in the profile CD)
m2010000.nkp	Monitor profile which is actually used.	Changes by the profile calibration (Monthly setup)

Chapter 6

Mechanical adjustment

The point of this chapter

Purpose of study

- Study about the printer mechanical adjustment.

135/240AFC

Scanner section

Paper advance section

How to carry out the training

- Carry out the practical training mainly and explain the cautions, referring to the materials.

Removing the unit (Practical training)

* Remove and attach the scanner.

- Swing and Tilt Adjustment
- Light axis adjustment
- Light source registration
- Focus adjustment

Removing each unit (Practical training)

* MMC

- Position adjustment of mount carrier
- Position adjustment of AF emission sensor
- Position adjustment of AF detection sensor

* Colorimeter unit

- Remove the colorimeter unit/Replace the calibration plate
- Position change and Head height adjustment of colorimeter unit

* Paper supply section A

- Remove paper supply unit A.
- Replace the paper cutter / Right angle adjustment
- Paper hold timing adjustment of arms
- Pressure adjustment of CVP

Removing each unit (Practical training)

* Paper supply section B

- Remove the paper supply unit / Position adjustment

* Exposure advance unit

- Remove the exposure advance unit.

Be careful because the exposure advance unit may drop from the stopper.

* Engine section

- Remove the laser unit. (including the PC control unit)

* Paper advance section

- Remove the paper advance unit.
- Standard adjustment of paper advance unit
- Remove the processor insertion unit.

Mechanical adjustment (Film carrier section)

1. AFC

Point 1: In some of the sensors, only connector section itself can be replaced.

The other sensor should be replaced as a whole of sensor PCB.

Point 2: After replacing the AFC, the AFC focus adjustment for each magnification is necessary for each AFC to be used.

2. 135/240MMC

Point 1: Explain the position adjustment of AF sensor.

Mechanical adjustment (Scanner section)

1. Scanner unit

Point 1: Impossible to disassemble

(If you disassemble it, it is out of warranty.)

Point 2: Compatible with the scanner unit of QSS-28/29

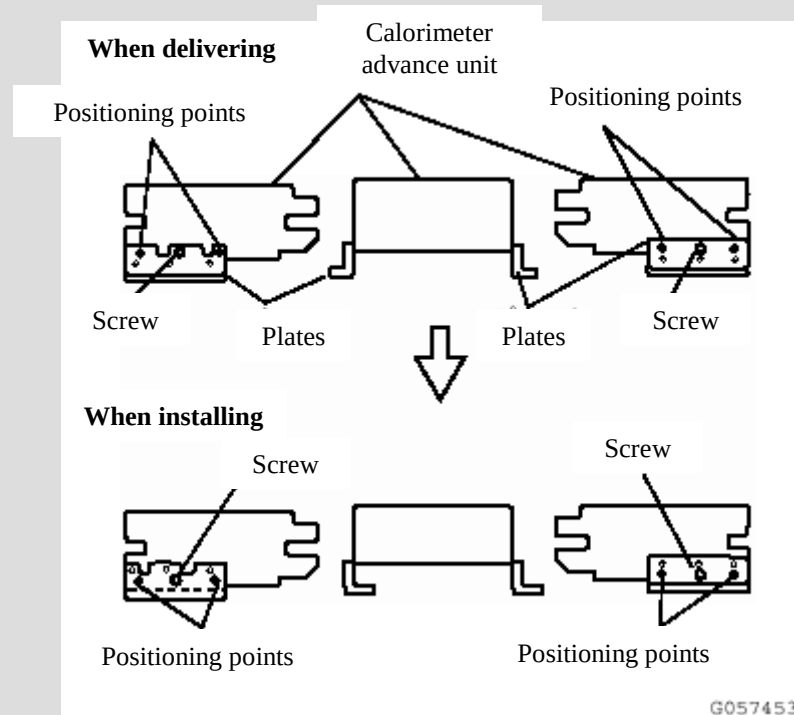
Mechanical adjustment (around the table)

1. Colorimeter

Point 1: The colorimeter has its own data.

(The data is contained in the attached FD.)

Point 2: When replacing the colorimeter, it is necessary to change the plate position and check the head height adjustment.



Mechanical adjustment (Paper supply section A)

1. Paper supply unit A

Point 1: The paper hold timing adjustment is same with the Arm adjustment (QSS-29).

2. Paper cutter unit

Point 1: Almost same with the cutter unit adjustment (QSS-26)

Point 2: Not compatible with the cutter unit (QSS-26)

3. CVP (Correction Value Print) unit

Point 1: The ink ribbon cassette is same with the QSS-28/29.

Point 2: The special ink which will not stick around is used. It is improved, comparing with the conventional ones.

Mechanical adjustment (Paper supply section B)

1. Paper supply section B

Point 1: When shipping from the factory, paper supply section is assembled with the machine main body. (Both of domestic and overseas)

Point 2: Possible to modify the machine from Single-magazine specification to Dual magazine specification.

Mechanical adjustment (Paper supply section B)

2. Paper supply unit B

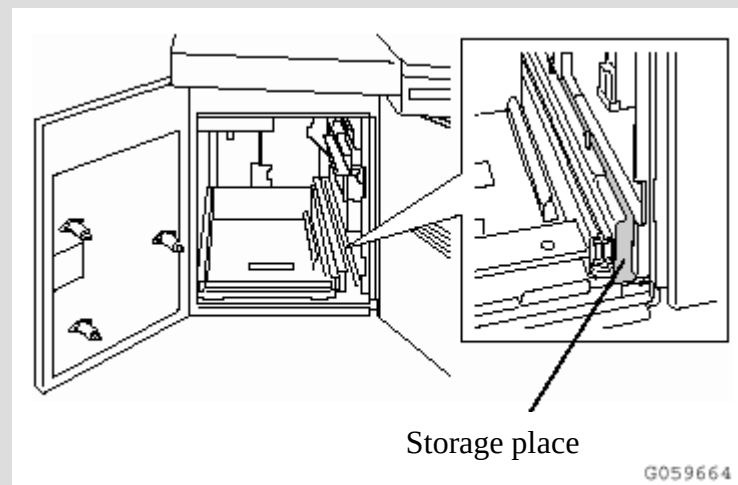
Point 1: When removing paper supply unit B, the position adjustment tools below are necessary.

Spacer plate, Hexagonal socket shoulder bolts

Point 2: In case of the Dual magazine-specification machines, the position adjustment tool is attached to a machine as a fixing angle.

IMPORTANT*****

Store the fixing angle by the right side of magazine mount (B).



Mechanical adjustment (Exposure advance section)

1. Exposure advance unit

Point 1: It is not necessary to adjust the pressure rollers of exposure advance unit and carry out the zigzagging adjustment.

(No mechanical adjustment)

Point 2: The banding adjustment of exposure advance unit is same with the QSS-29, and the adjustment is possible in the “Mechanical adjustment” → “Paper pressure operation correction” mode.

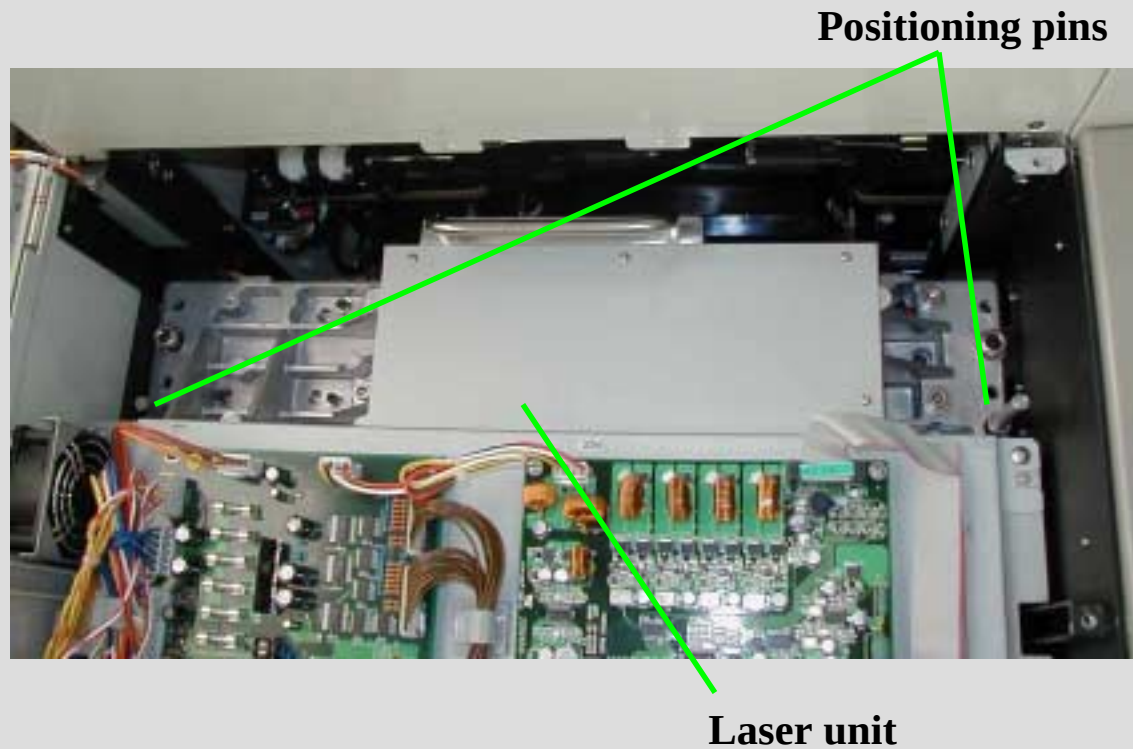
Point 3: It is necessary to clean the rollers of exposure advance unit every 6 month.

(Use the specified cleaning sheet.)

Mechanical adjustment (Engine section)

1. Laser unit

Point 1: When removing the laser unit, it is necessary to adjust the position of laser unit using the positioning pins.



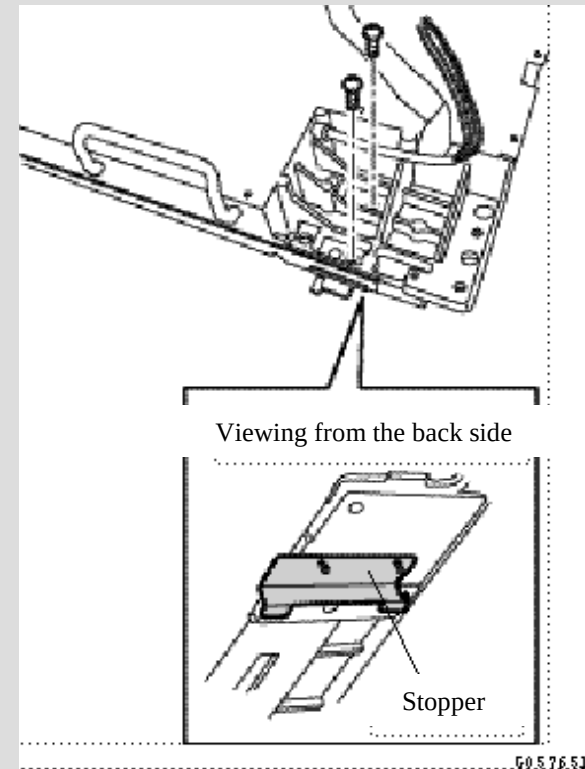
Mechanical adjustment (Engine section)

Point 2: Replace the laser unit as a whole unit.

The followings are not attached with the engine.

- *Stopper for installing the exposure advance unit on the back side of unit.

- *PCBs on the unit (Quantity: 3)



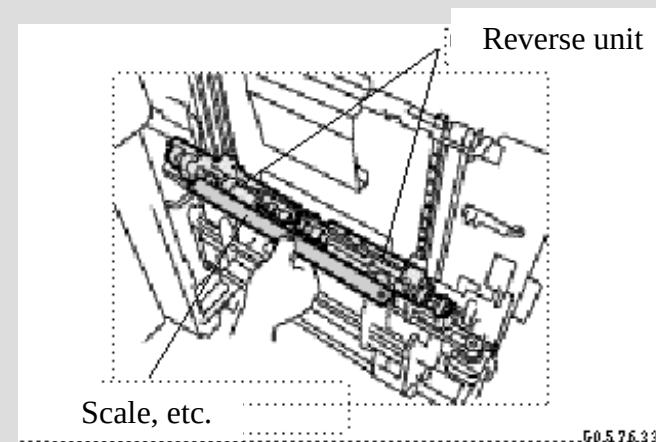
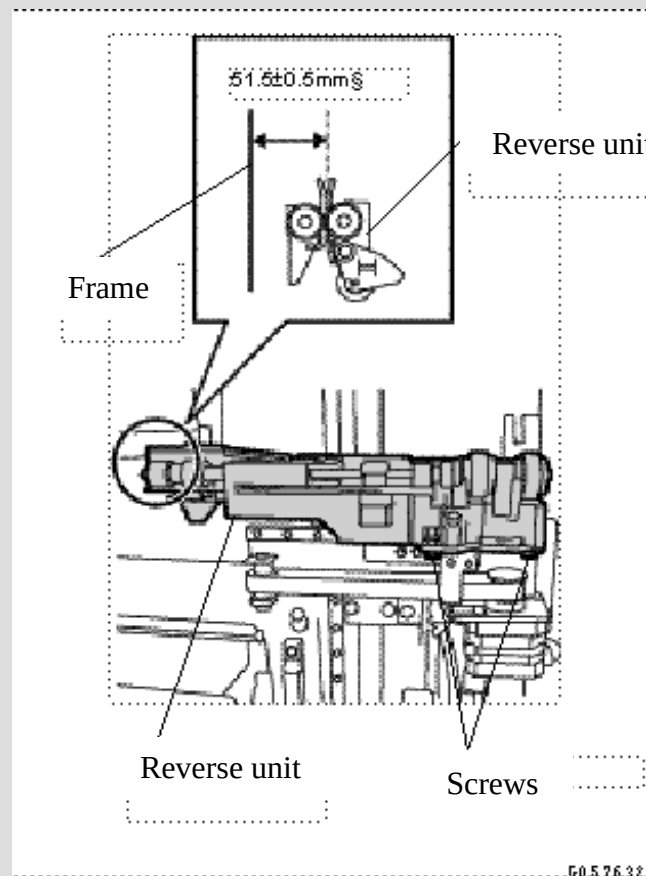
Point 3: Impossible to remove and disassemble the laser unit.

Mechanical adjustment (Paper advance section)

Adjustment when replacing the reverse unit

Point 1: When installing the reverse unit, adjust it so that it is 51.5 ± 0.5 mm from the frame.

Point 2: After installing it, it is necessary to check in the “Reverse unit adjustment” mode.



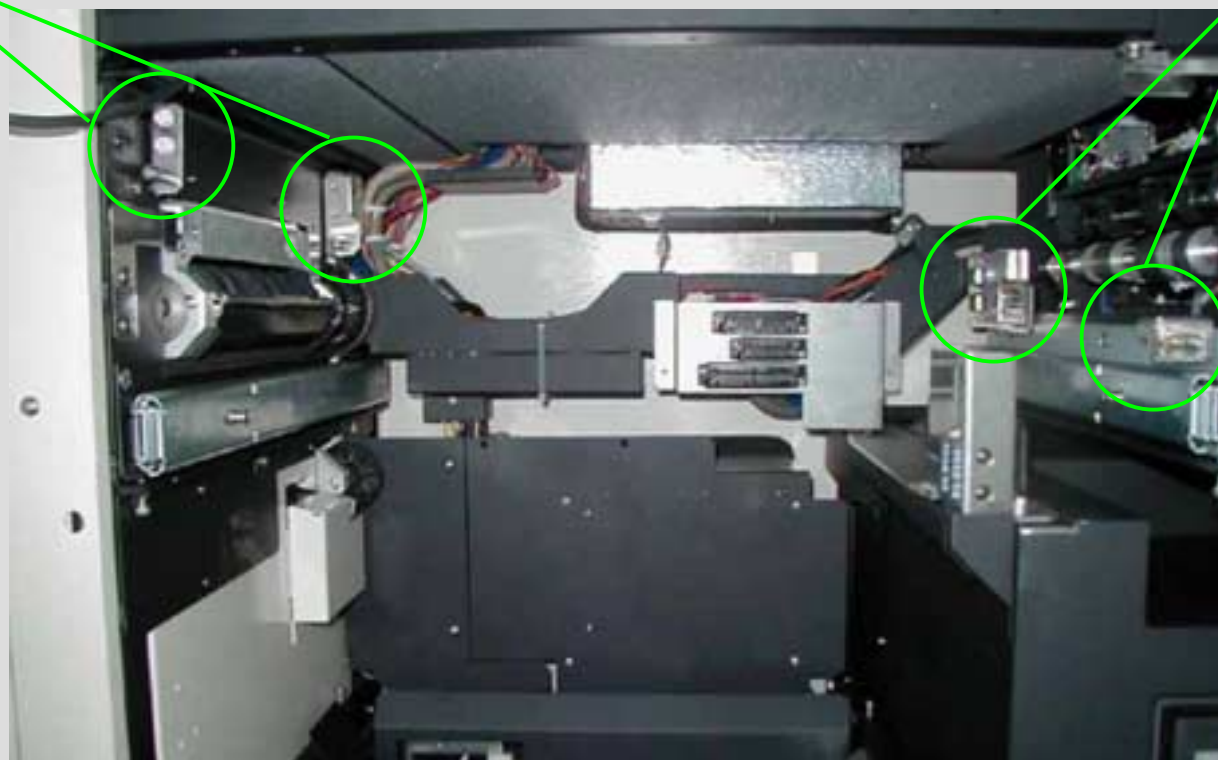
Location of main PCBs

- *ATX mother board
- *ATX power supply and battery pack
- *PCI-LVDS conversion PCB
- *PCI-ARCNET conversion PCB
- *System control PCB
- *Image processing PCB and D-ICE PCB
- *AFC/Scanner control PCB
- *Printer I/O PCB 1, 2
- *Printer control PCB
- *Processor control PCB
- *Laser control PCB
- *Laser I/O PCB
- *B/G laser driver
- *AOM driver

Screws which cannot be touched

**Positioning pins of
paper supply unit A**

**Positioning pins of
paper supply unit A**



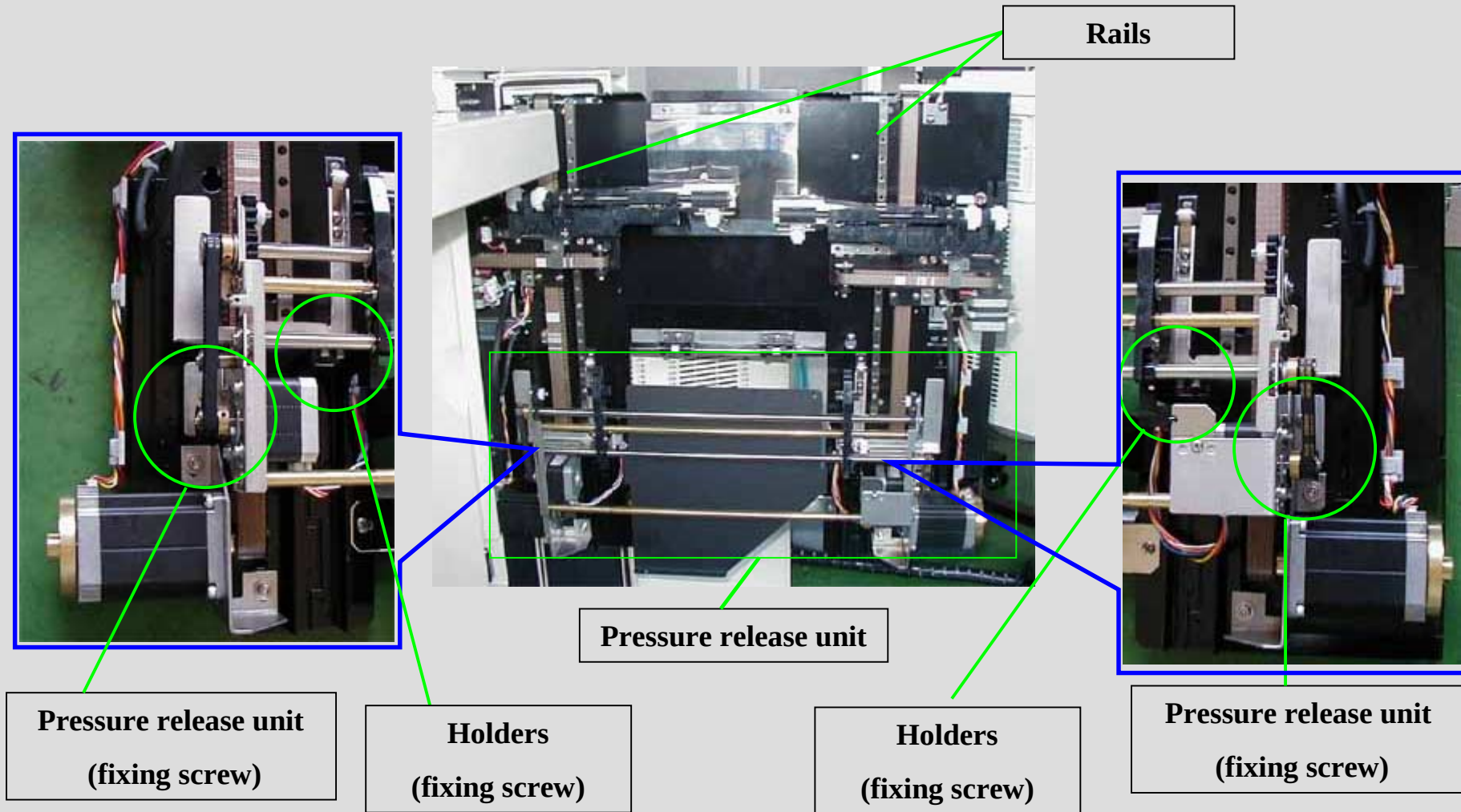
Screws which cannot be touched



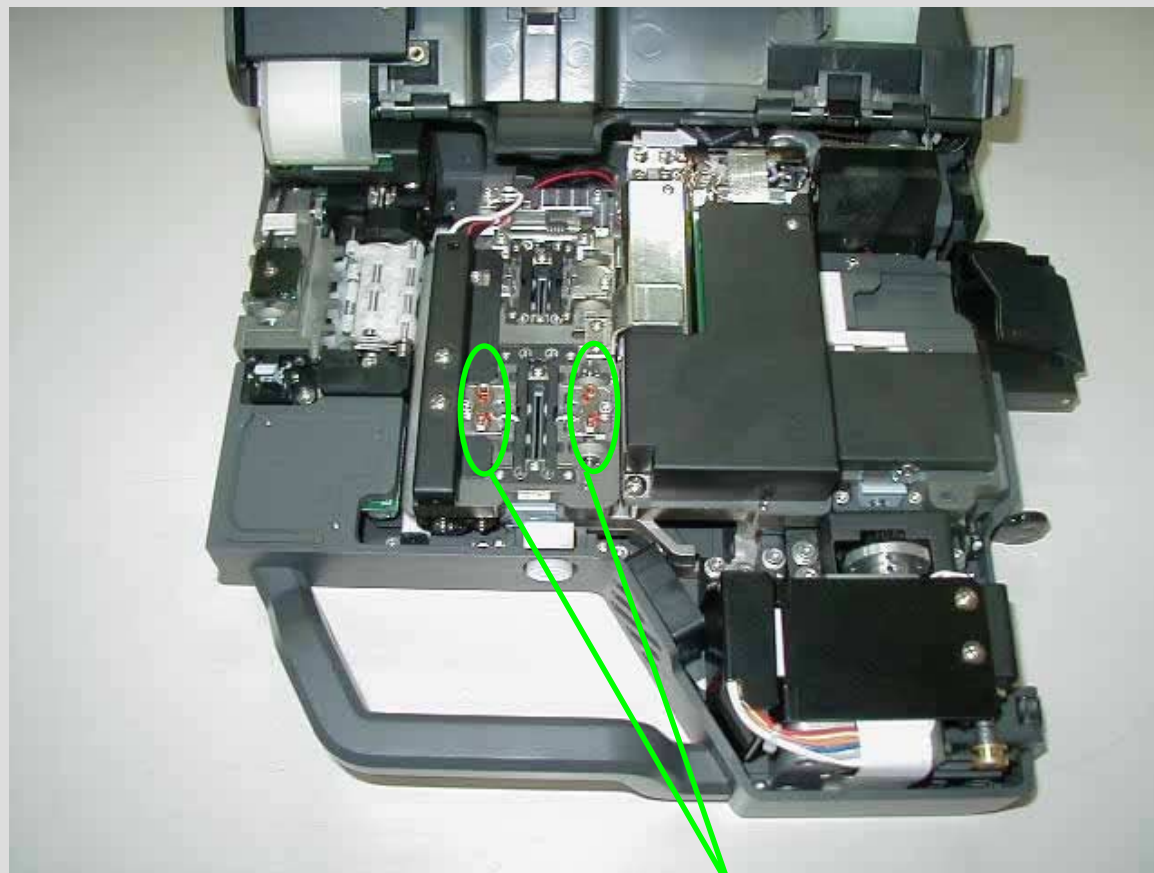
**Positioning pins of
paper advance unit**

**Positioning pins of
paper advance unit**

Screws which cannot be touched



Screws which cannot be touched



Pressure roller unit (fixing nuts)

Maintenance and Adjustment

Service Manual Referring page

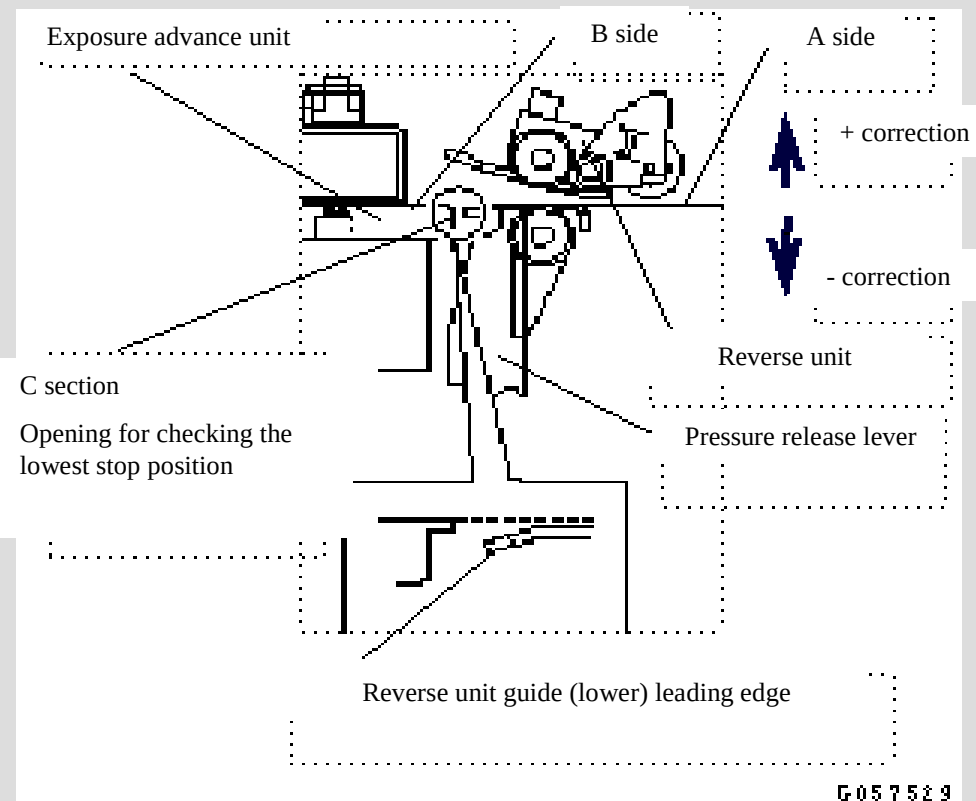
- Scanner filter position adjustment ----- 3226
- Reverse unit correction ----- 3201
- Paper advance length correction ----- 3202
- Arm unit zigzagging correction ----- 3203
- Exposure image correction ----- 3204
- Exposure start timing adjustment ----- 3205
- Paper pressure operation correction ----- 3206/2582
- Exposure zoom rate correction ----- 3207
- Exposure position correction ----- 3208
- Exposure zoom rate fine adjustment ----- 3209
- Exposure center correction ----- 3210

Maintenance/Adjustment (Paper advance section)

1. Reverse unit stop position correction

Point 1: Input the value below.

Correct the position so that the height of “Reverse unit A side” and “Exposure advance unit B side” is same, and then minus “0.3 mm” from the value and register it.

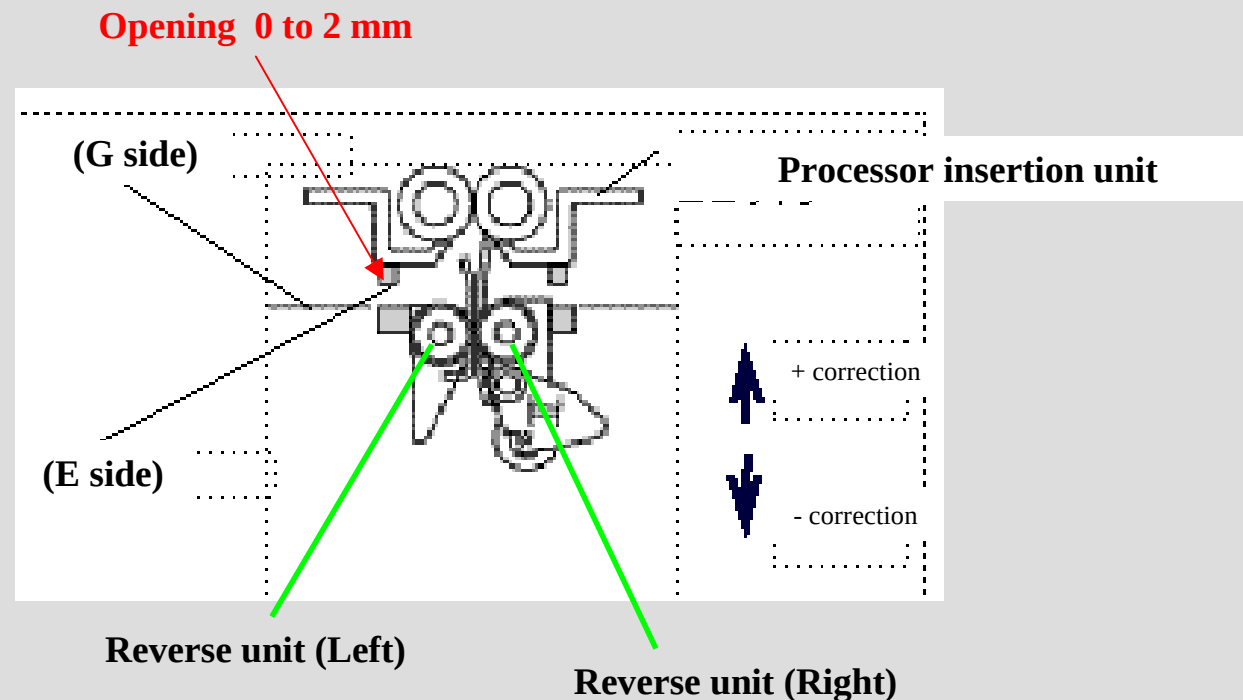


Maintenance/Adjustment (Paper advance section)

2. Reverse Unit Upper Stop Position Correction

Point 1: Adjust the position of reverse unit so that the opening between “Reverse unit (Left) E side” and “Processor insertion unit D side” is 0 to 2 mm.

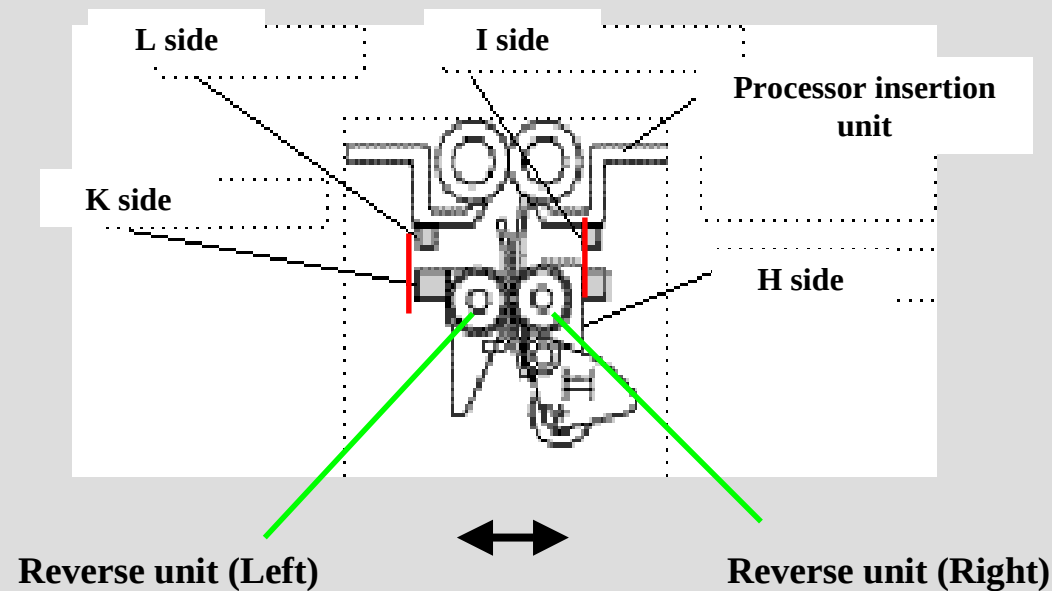
Point 2: For the Reverse unit (right), input the same correction value with Reverse unit (left).



Mechanical adjustment (Paper advance section)

Point 3: When the reverse unit (Left) (K side) and processor insertion unit (L side) are not at the same position, the standard adjustment of reverse unit (Left) is necessary.

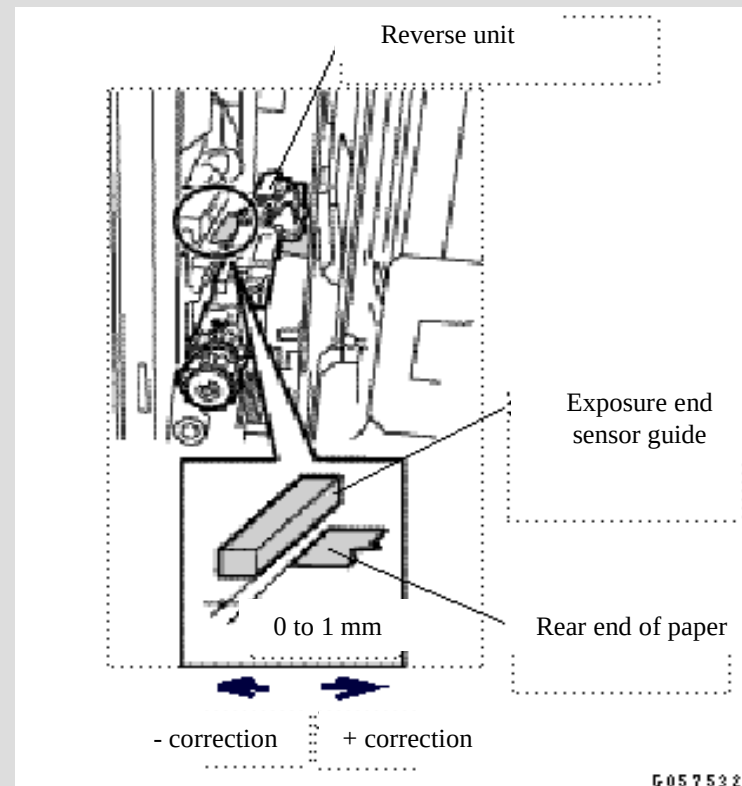
Point 4: When the reverse unit (Right) (H side) and processor insertion unit (I side) are not at the same position, the standard adjustment of reverse unit (Right) is necessary.



Mechanical adjustment (Paper advance section)

3. Paper stop position correction

Point 1: When Reverse unit (Left/Right) receives the paper from the exposure advance unit, adjust so that the stop position of paper rear end is 0 to 1 mm from the exposure advance unit.



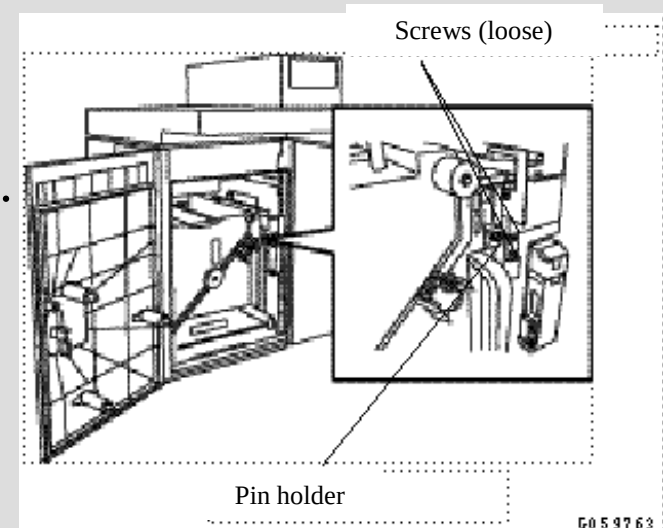
Paper zigzagging adjustment in the Printer section

As for the paper zigzagging adjustment, follow the procedure below.

1. Zigzagging of paper which is supplied from magazine mount A
 - * Make a test print in the [Arm unit zigzagging correction], and adjust the zigzagging.
2. Zigzagging of paper which is supplied from magazine mount B
 - * Set the magazine of magazine mount A onto magazine mount B, and carry out the zigzagging adjustment like procedure 1.
 - * If the zigzagging amount is not the standard value, adjust the position of receiving pin (Paper supply unit B).

IMPORTANT*****

After adjusting the pin holder of magazine, confirm that the magazine can be set smoothly.



Recovery/Installing the QSS software

- Recovery
- Installing the QSS software
- Installing the driver
- Software upgrading

Chapter 7

Service items

The point of this chapter

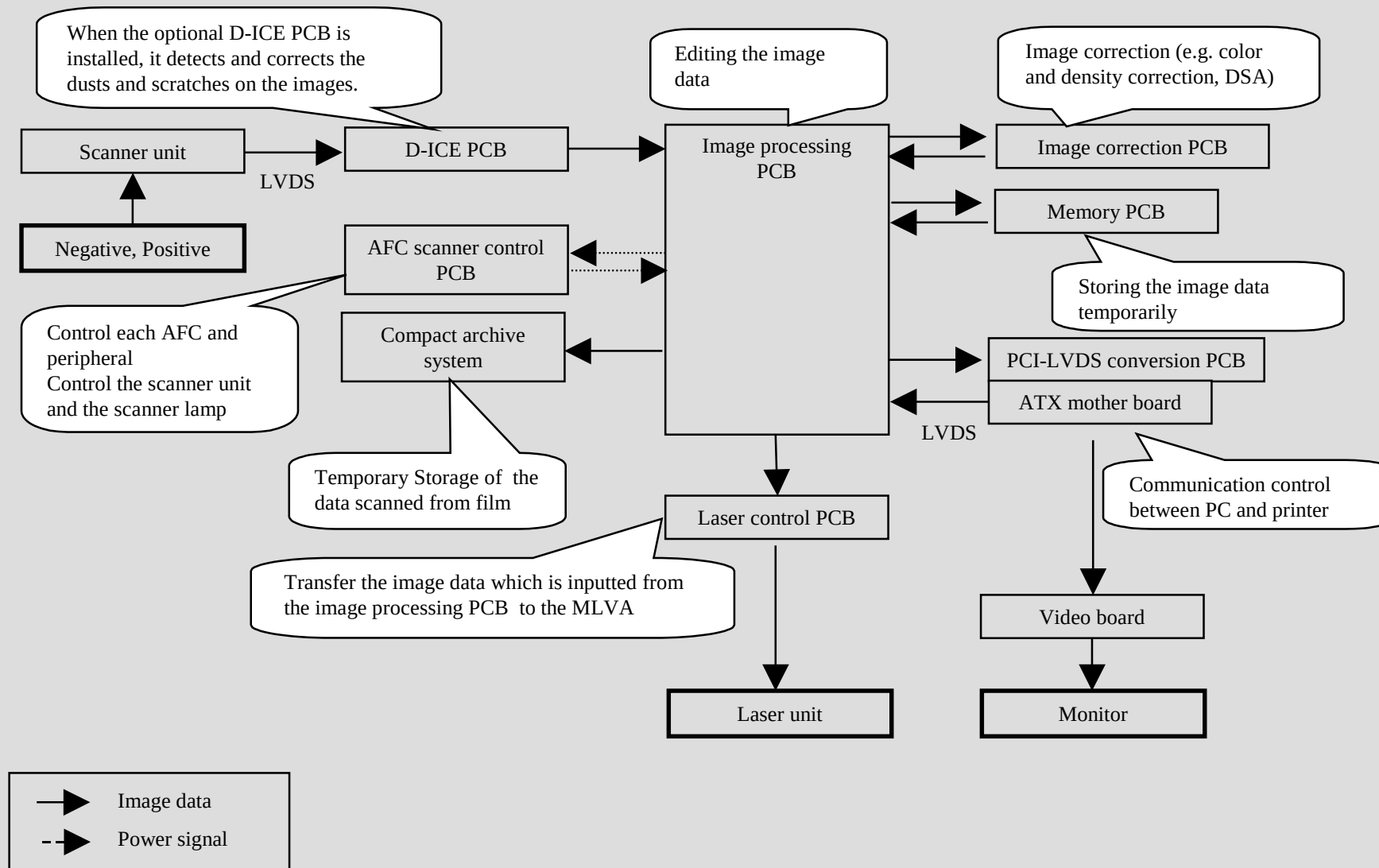
Purpose of study

- Study each data flow when printing.
 - Data calibration
 - Data flow for each print
 - Maintenance and adjustment
- Study the cautions when replacing PCBs.

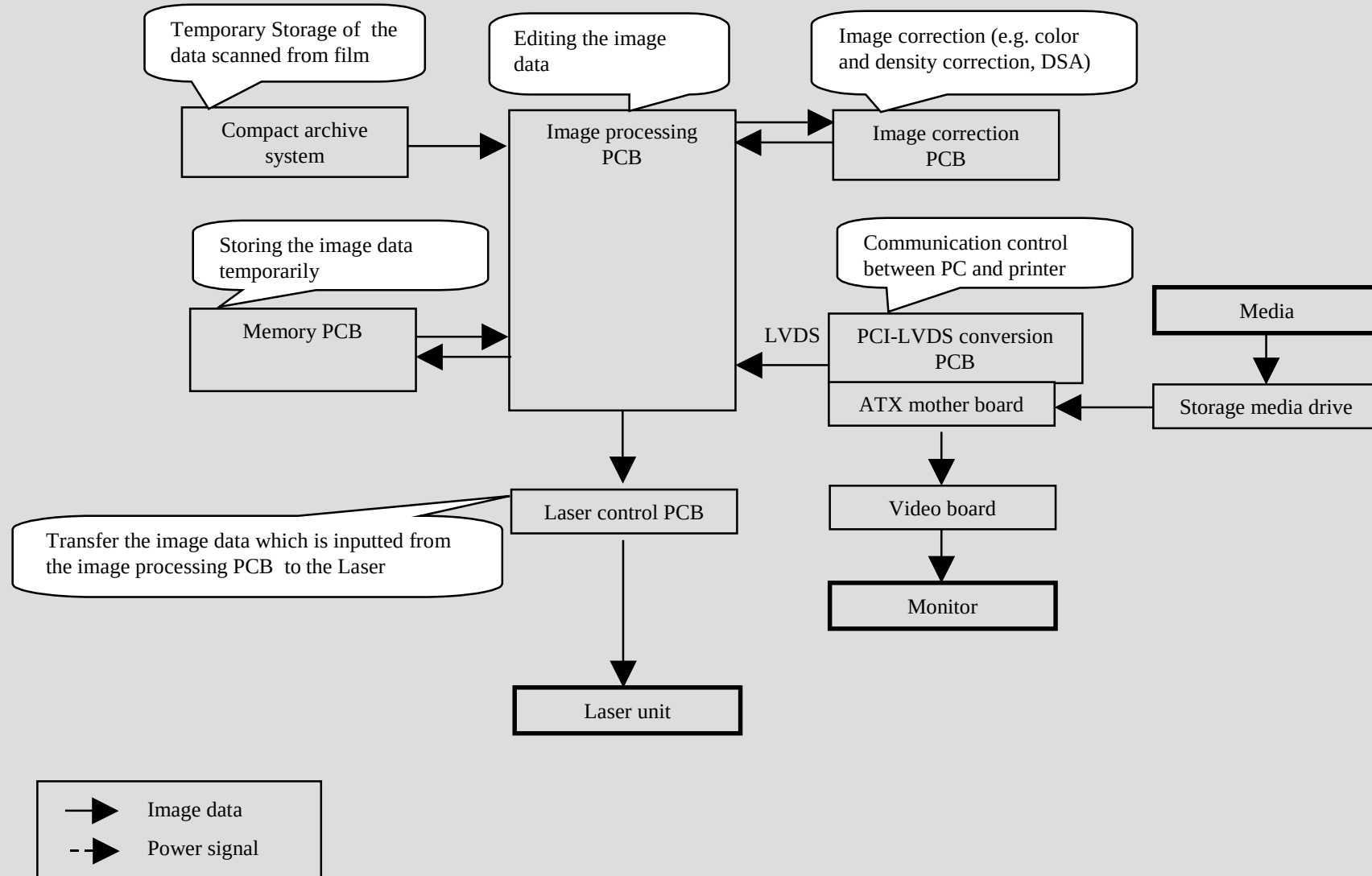
How to carry out the training

- Explain the items, referring to the training materials and a machine.
- Explain the PCBs which are necessary to be replaced with care.

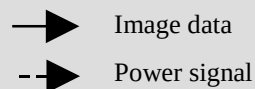
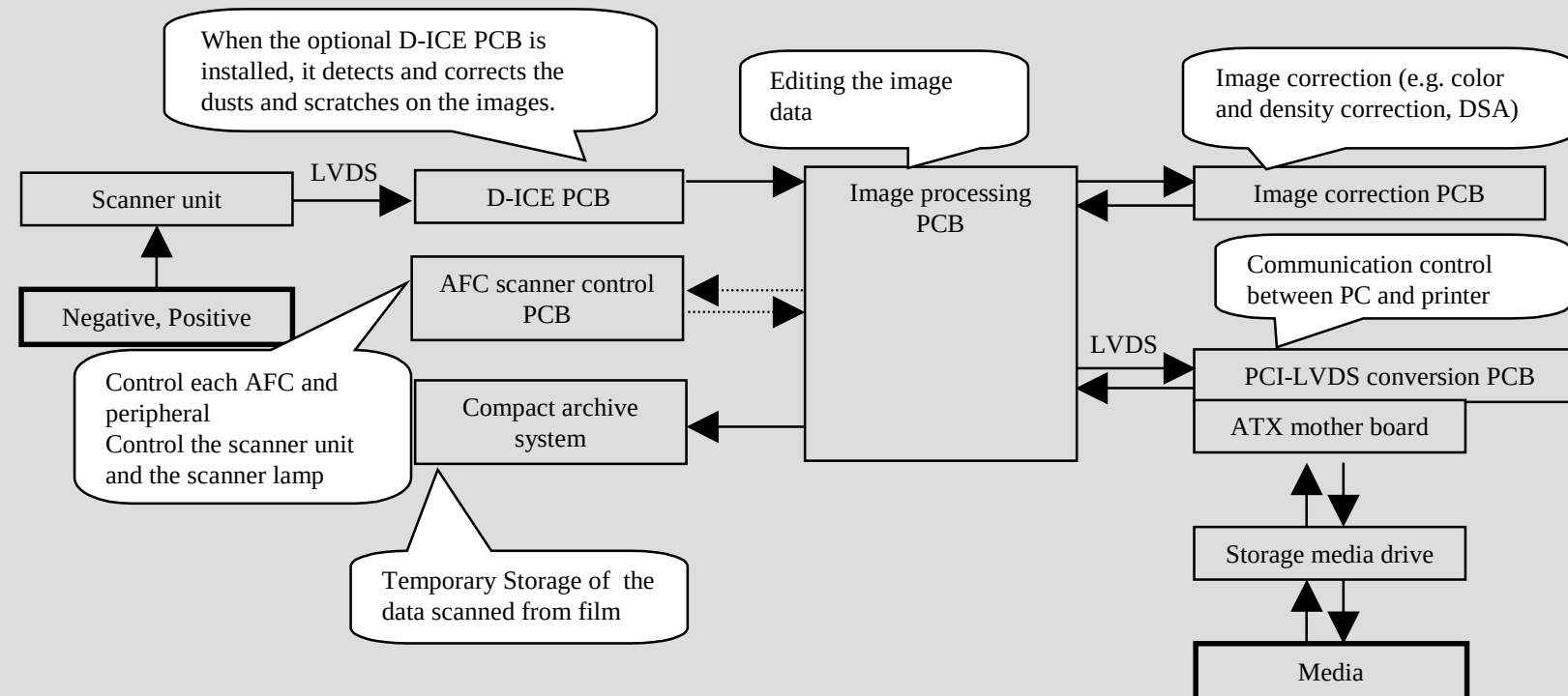
Data flow when printing (Negative, Positive)



Data flow when printing (Media)



Data flow when storing the images



Cautions when replacing PCBs

Scanner section

PCB	D	J	S	B	V	Others
AFC/scanner control PCB	1	-	1	-	-	Sensor standard adjustment for each AFC
AFC/scanner driver PCB	-	-	-	-	-	
Lamp power supply	-	-	-	-	-	
Multi power supply (scanner)	-	-	-	-	-	

D:: DIP switch setting (Set it as same as before replacing.)

J:: Confirming the connector for the jumper (Set it as same as before replacing).

S:: Reading the System program

B: Reading the backup data

V: Necessary to adjust the potentiometer

1: Execute

- : Not execute

Cautions when replacing PCBs

Printer section

PCB	D	J	S	B	V	Others
Image processing PCB	1	1	1	-	-	
D-ICE PCB (option)	1	1	1	-	-	
LVDS connecting PCB (option)	-	-	-	-	-	
Printer I/O PCB 1	1	-	-	-	-	
Printer I/O PCB 2	-	-	-	-	-	
Colorimeter control PCB	1	-	1	-	-	“Paper front end advance length correction” and “Film feed error correction” in the “Colorimeter unit”
Printer control PCB	1	-	1	1	-	
Laser control PCB	-	-	-	-	-	
Clock PCB	-	-	-	-	-	
Laser I/O PCB	-	-	-	-	-	

Cautions when replacing PCBs

Printer section

PCB	D	J	S	B	V	Others
B, G, R-AOM driver	-	-	-	-	-	

Cautions when replacing PCBs

Printer section

PCB	D	J	S	B	V	Others
B, G laser driver	-	-	-	-	-	Connect the flat cable according to the color of sticker of frame.
Processor control PCB	1	-	1	1	-	
Multi power supply (printer)	-	-	-	-	-	
Printer power supply	-	-	-	-	-	
Laser power supply 1	-	-	-	-	-	
Laser power supply 2	-	-	-	-	-	
Laser power supply 3	-	-	-	-	-	
Laser power supply 4	-	-	-	-	-	
Image processing PCB power supply	-	-	-	-	-	
Image processing power supply 2 (option)						

Cautions when replacing PCBs

Processor section

PCB	D	J	S	B	V	Others
Processor I/O PCB	-	-	-	-	-	
Main relay PCB	-	-	-	-	-	
Processor relay PCB	-	-	-	-	-	
SM I/O PCB	-	-	-	-	1	Sensitivity adjustment of replenishment sensor
Power supply	-	-	-	-	-	

Cautions when replacing PCBs

Options

PCB	D	J	S	B	V	Others
PU control PCB	1	-	1	1	-	
Dual magazine PCB	-	-	-	-	-	
CVP PCB	-	-	-	-	-	

Cautions when replacing PCBs

Personal computers

PCB	D	J	S	B	V	Others
ATX mother board	-	-	-	-	-	BIOS setting
ATX power supply battery pack	-	-	-	-	-	Turn ON the ATX power supply
Hard disk drive	-	1	1	1	-	Following the recovery procedure, it is necessary to carry out the items below. Reading the OS Reading the QSS software Reading the DVD-RAM driver (option) Reading the Zip driver (option) Reading the driver of flatbed scanner (option) Reading the profile data Reading the backup data Setting each drive allocation
PCI-LVDS conversion PCB	-	-	-	-	-	
PCI-ARCNET conversion PCB	-	-	-	-	-	
System control PCB	-	1	-	-	-	

Cautions when replacing PCBs

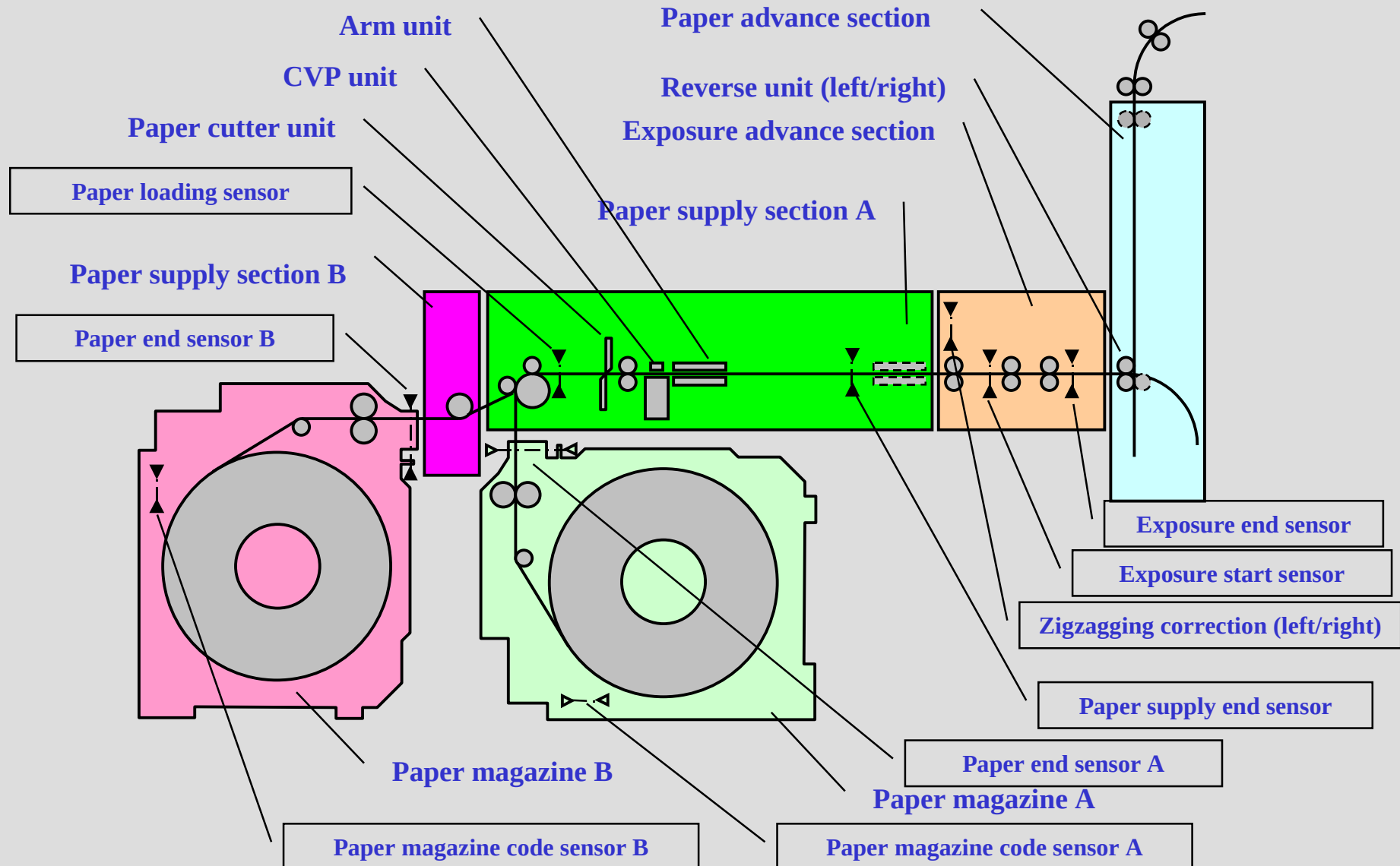
Personal computers

PCB	D	J	S	B	V	Others
Keyboard change PCB	-	-	-	-	-	
Keyboard connecting PCB	-	-	-	-	-	
PS2 PCB	-	-	-	-	-	
Hard disk drive	-	-	-	-	-	Compact archive system

Errors and countermeasures

- Film jam
- Paper jam

Illustration (Printer advance section)

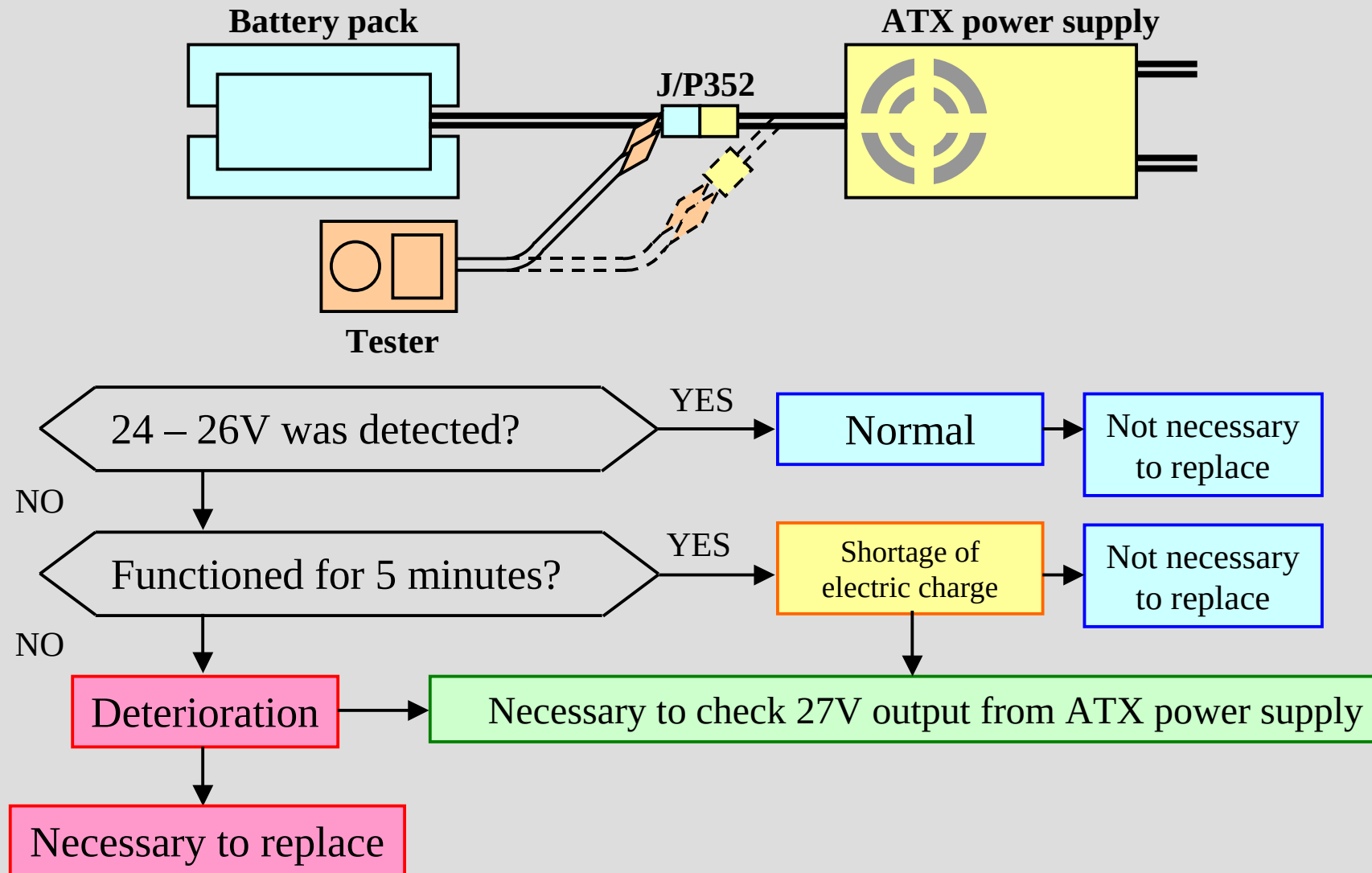


Maintenance

- Time to replace
- Cleaning the drives

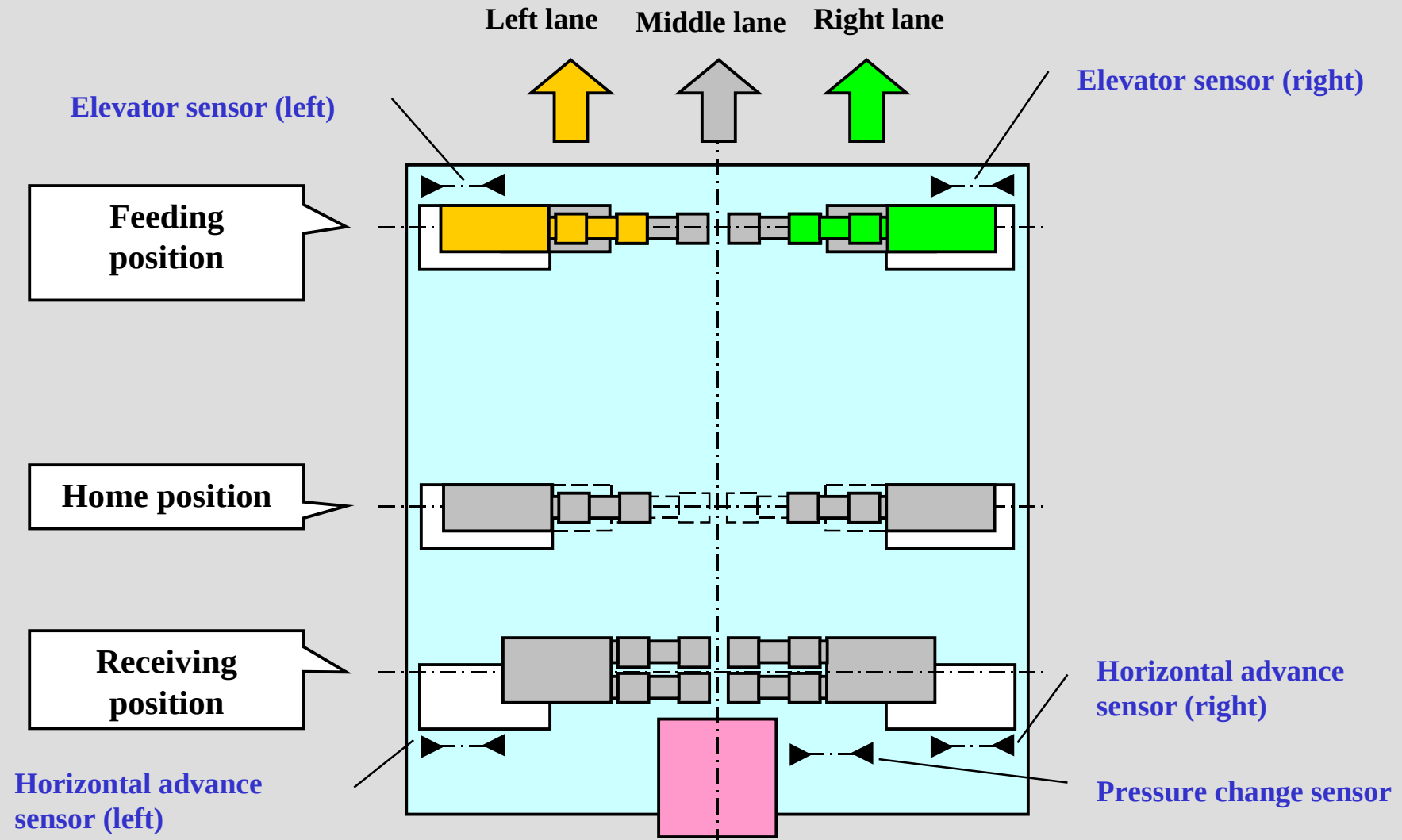
Refer to the Service Manual 8011.

How to check the voltage of battery pack



Movement of reverse unit

Position of reverse unit



Reverse unit operation for paper size each

Condition	Arm operation
Paper width: 102 mm or less	
Paper width: 117 mm or more Leading of order 50 th print in one order Feeding the leading edge Fogged processing Splice processing	

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Chapter 9

Replenishment devices

The point of this chapter

Purpose of study

- Study the changes from the conventional SM machines.

How to carry out the training

- Explain using the training materials.

Changes from the conventional machines

Added the SM Forced replenishment function

To reduce what the processing solution remains in the SM Replenishment package

When one of the replenishment solution is run out, replenish the other solution in the same package compulsory to the processing tank

This enables you to replace the package when the package is empty.

When using the SM forced replenishment function, mark the check box of “SM replenishment setting” of “Machine Specification”

The limit amount of the forced replenishment is set in the [SM Forced Replenishment Amount setting] of [Total Replenishment Amount].

The attention “Replace the Replenishment Package with a new one” will appear in the following conditions.

Attention No.	The condition of occurrence	SM Replenishment setting	Status of machine
700	Forced Replenishment was not carried out.	No condition	Idle
701	Attach the replenishment package.	No condition	No condition
705	Forced Replenishment was carried out.	No condition	During printing
707	Forced Replenishment was carried out.	ON	Idle
708	Forced Replenishment was carried out.	ON	During printing

Changes from the conventional machines

Changed the replenishment pump

To reduce the time for forced replenishment, all of O-type belloz pumps are changed to type-2.

QSS-30 Training Materials

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